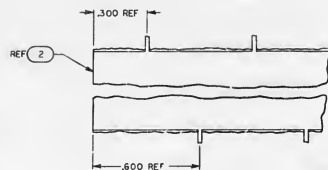
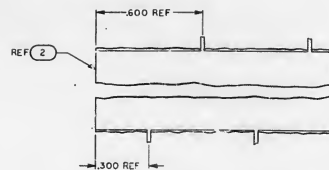


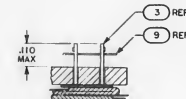
THIS DRAWING IS THE PROPERTY OF THE UNITED STATES GOVERNMENT. IT IS LOANED TO YOU BY THE GOVERNMENT AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE GOVERNMENT. IT IS TO BE RETURNED TO THE GOVERNMENT ON OR BEFORE THE DATE SPECIFIED HEREON.



SECTION A-A

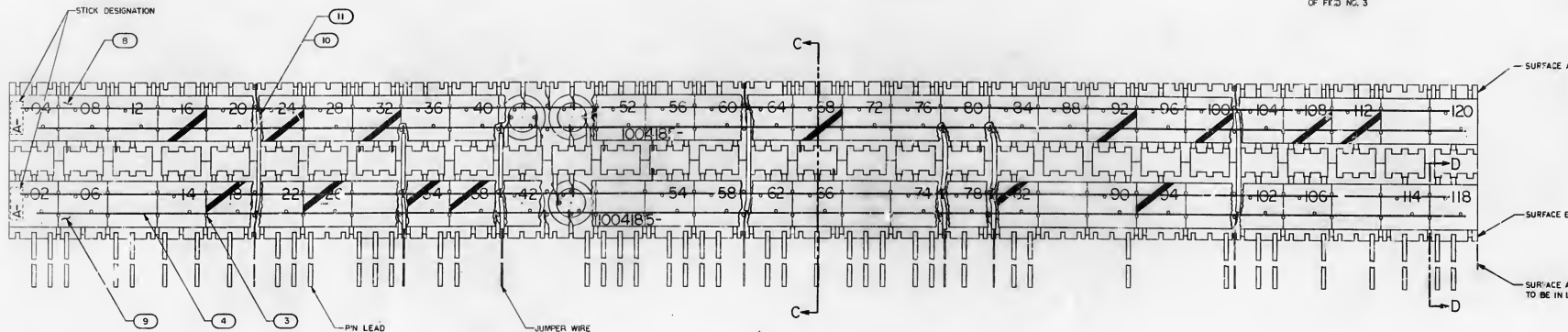


SECTION B-B

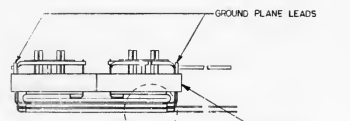
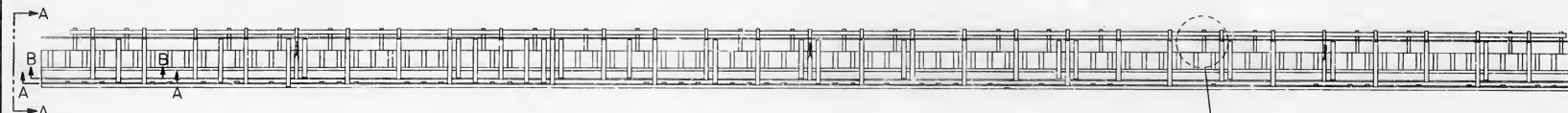


SECTION D-D  
TYP FOR ALL LOCATIONS  
OF FIG NO. 3

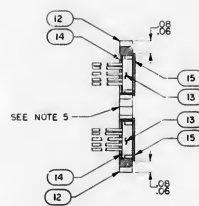
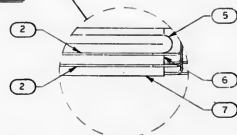
REV	DESCRIPTION	DATE	APPROVAL
J	REPLACE REV H WITH CHANGES PER TORR 06228	10-26-80	WMC
K	REVISED PER TORR 06024	11-26-80	WMC
L	REVISED PER TORR 06220	12-16-80	WMC
M	REVISED PER TORR 07222	12-16-80	WMC
N	REVISED PER TORR 12830	12-16-80	WMC
O	REVISED PER TORR 12830	12-16-80	WMC
P	REVISED PER TORR 12830	12-16-80	WMC



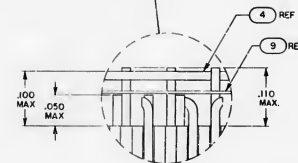
VIEWS SHOWN ARE OF NO SPECIFIC MODULE. JUMPER WIRES ARE TYPICAL



VIEW A-A



SECTION C-C  
FIND NO. 2 THRU 11  
REMOVED FOR CLARITY  
SCALE: NONE



J REPLACES REV H WITH CHANGES

- NOTES:
1. INTERPRET DWG IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. WELD PER NDI002005
  3. AR DENOTES AS REQUIRED
  4. CSD IN TABLE 1 SIGNIFIES FIND NO. 12 AND FIND NO. 14 TO BE OMITTED IN THIS POSITION
  5. BOND HOUSING, FIND NO. 12, TOGETHER PER NDI002004 ORIENTING AS SHOWN
  6. IDENTIFY PER NDI000419

QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	AR 1006026-3	INSULATION TAPE, ELECTRICAL	15
1	AR 1004627	INSULATOR	14
1	AR 1006771	MICRO-NOR GATE (U-47)	13
2	1004689	HOUSING, MICROLOGIC	12
AR	1006767-8	WIRE, ELECTRICAL .020 DIA.	11
AR	1006776-21	INSULATION, SLEEVING	10
1	SEE CHART	INSULATOR, STICK	9
1	SEE CHART	INSULATOR, STICK	8
1	SEE CHART	.000 MATRIX ASSEMBLY (6)	7
1	SEE CHART	.000 MATRIX ASSEMBLY (6)	6
AR	1006757-7	WIRE ELECTRICAL NICKEL .005 2.0" NO	4
AR	1015402	WIRE ELECTRICAL KOWAR	3
AR	1004100	GROUND PLANE	2
1	1004100	GROUND PLANE	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON DO NOT SCALE THIS DRAWING MATERIAL		MANNED SPACECRAFT CENTER HOUSTON, TEXAS MICRO-LOGIC MODULE SUB ASSEMBLY (TABULATED) (EVEN)	
1003074	USED ON	DATE: 10-26-80 DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVAL: [Signature]	CODE IDENT NO. 1003082 SCALE: 4/1 SHEET 1 OF 2

begin; -- create tablespace  
create tablespace users\_data tablespace\_name users\_data  
-- create user and assign privileges  
create user users\_username identified by users\_password  
-- create schema and assign privileges  
create schema users\_schema identified by users\_password  
-- create table and assign privileges  
create table users\_table (column\_name datatype) tablespace\_name  
grant all privileges on users\_table to users\_username

POSITION NO.

SEE TABLE " FOR POSITION  
OF THESE COMPONENTS

MODULE NO.	INSULATOR FIND NO.8	INSULATOR FIND NO.9	MATRIX 2 FIND NO.5	MATRIX 4 FIND NO.6	MATRIX 6 FIND NO.7	PART NO.	REV	QUANTITY OF FIND NO. 8	QUANTITY OF FIND NO.13	QUANTITY OF FIND NO.14
A1-A16	10C04170-2	10C04170-2	10C03063-1	10C03064-1		10C30382-1	P	1	58	58
A17	10C04173-4	10C04173-5	10C03063-7	10C03064-3		10C30382-2	P	1	60	60
A18	10C04172-4	10C04172-4	10C03063-1	10C03064-1		10C30382-3	P	1	58	58
A21	10C04186-4	10C04186-2	10C03063-3	10C03064-5	10C30364-66	10C30382-4	P	2	54	54
A25	10C04183-7	10C04183-4	10C03063-23	10C03064-23		10C30382-5	P	1	58	58
A25	10C04171-7	10C04171-7	10C03063-7	10C03064-7		10C30382-6	P	1	49	49
A24	10C04185-4	10C04185-2	10C03063-3	10C03064-1	10C30364-62	10C30382-7	P	2	52	52
A25	10C04184-4	10C04184-2	10C03063-29	10C03064-21		10C30382-8	P	1	57	57
A26	10C04178-4	10C04178-4	10C03063-1	10C03064-1		10C30382-9	P	1	58	58
A27	10C04174-4	10C04174-4	10C03063-1	10C03064-1		10C30382-10	P	1	58	58
A28	10C04176-4	10C04176-4	10C03063-25	10C03064-25		10C30382-11	P	1	57	57
A29	10C04176-4	10C04176-4	10C03063-25	10C03064-25		10C30382-12	P	1	57	57
A30-A31	10C04178-4	10C04178-2	10C03063-17	10C03064-17		10C30382-13	P	1	58	58
A31	10C04176-4	10C04176-4	10C03063-13	10C03064-25		10C30382-14	P	1	58	58
A33-A34	10C04172-4	10C04172-4	10C03063-17	10C03064-17		10C30382-15	P	1	58	58
A35	10C04171-2	10C04171-2	10C03063-3	10C03064-5		10C30382-16	P	1	58	58
A36	10C04180-4	10C04180-4	10C03063-21	10C03064-21		10C30382-17	P	1	58	58
A37	10C04180-4	10C04180-2	10C03063-21	10C03064-41		10C30382-18	P	1	60	60
A38	10C04186-4	10C04186-2	10C03063-3	10C03064-5		10C30382-19	P	1	58	58
A39	10C04176-4	10C04176-4	10C03063-23	10C03064-23		10C30382-20	P	1	58	58
A40	10C04197-4	10C04197-7	10C03063-35	10C03064-37		10C30382-21	P	1	53	53
A18	10C04172-2	10C04172-2	10C03063-41	10C03064-41		10C30382-22	P	1	50	50
A42	10C04183-4	10C04183-4	10C03063-3	10C03064-3		10C30382-23	P	1	53	53
A43	10C04181-4	10C04181-3	10C03063-44	10C03064-44		10C30382-24	P	1	57	57
A27	10C04174-4	10C04174-2	10C03063-45	10C03064-45		10C30382-25	P	1	58	58
A28	10C04176-4	10C04176-4	10C03063-47	10C03064-47		10C30382-26	P	1	60	60
A44	10C04199-4	10C04199-2	10C03063-50	10C03064-50		10C30382-27	P	1	60	60

REVISED-GS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES 2/18/5	2/25/5	JB
K	REVISED PER TORR 06024	2/26/5	JB
L	REVISED PER TORR 06024	2/26/5	JB
M	REVISED PER TORR 07262	2/26/5	JB
N	REVISED PER TORR 07262	2/26/5	JB
P	REVISED PER TORR 07262	2/26/5	JB

① REPLACES REV H WITH CHANGES

QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIG. NO.
USE OF MATERIALS		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
ST. V INSTRUMENTATION L.B CONNECTION		MICRO-LOGIC MODULE SUB ASSEMBLY (T)BULATED) EVEN	
UNLES OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES TO NOT EXCEED TWO THIRDS DRAFTING		DRAWN BY <i>W. J. B. J. B. J. B.</i> CHECKED BY <i>W. J. B. J. B. J. B.</i> APPROVED BY <i>W. J. B. J. B. J. B.</i> DATE <i>10/15/68</i>	
DRAFT TREATMENT		DESA APPROVAL <i>W. J. B. J. B. J. B.</i> SCALE <i>1:1</i>	
NEET ASST	USED ON	DESA APPROVAL <i>W. J. B. J. B. J. B.</i> SCALE <i>1:1</i>	
APPLICATION		DESA APPROVAL <i>W. J. B. J. B. J. B.</i> SCALE <i>1:1</i>	

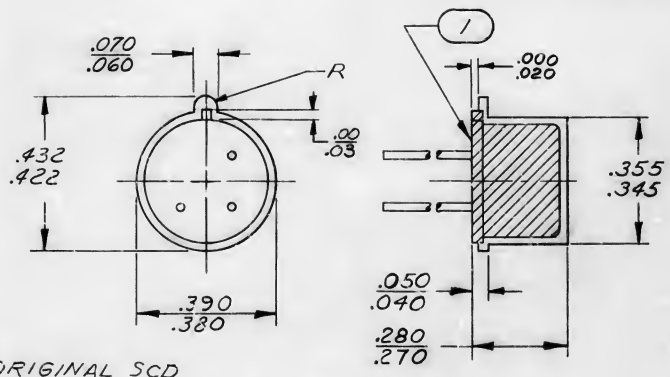
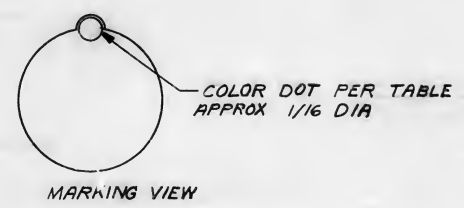


NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO RESPONSIBILITY FOR ANY INADEQUACIES, OMISSIONS, OR ERRORS, AND THE FACT THAT THE GOVERNMENT MAY HAVE PROVIDED TECHNICAL DATA IS NOT TO BE CONSIDERED AN IMPLICATION OR GUARANTEE AS TO ANY RIGHTS OR PERMISSIONS TO REPRODUCE, USE, OR SELL ANY INFORMATION THAT MAY BE IN ANY WAY BE RELATED THEREBY.

1003089

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 04487	11-5-61	WHL
B	REVISED PER TDRR 05796	1-24-62	WHL
C	REVISED PER TDRR 07625	9-11-60	WHL
D	REVISED PER TDRR 13684	11-11-64	WHL
	DR R. Lubrod CHKOUT RTM		

PART NO.	FIND NO. / TRANSISTOR NO.	DOT COLOR
1003089-1	1006759	WHITE
1003089-2	1006829	RED

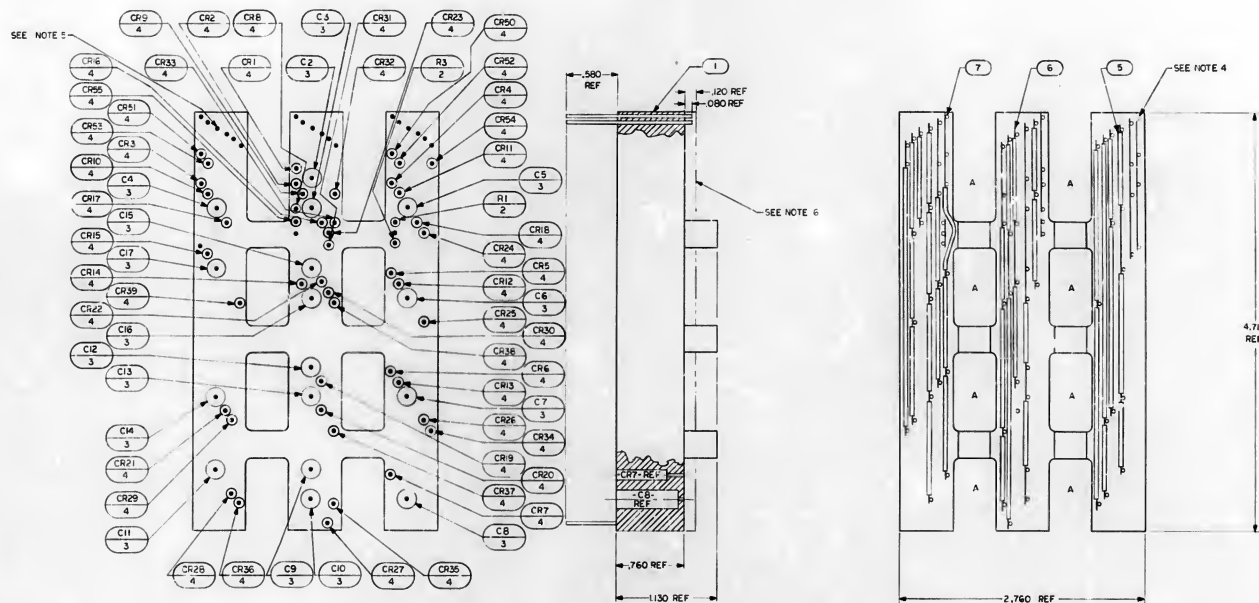


NOTES:

- ELECTRICAL REQUIREMENTS
  - ALL TRANSISTORS AFTER ENCAPSULATION, SHALL HAVE THEIR ELECTRICAL ACCEPTANCE REQUIREMENTS WITHIN THE LIMITS SET BY THE ORIGINAL SCD
- CONSTRUCTION REQUIREMENTS
  - ENCAPSULATE PER ND1002183
  - ALL LEADS ARE TO BE FREE OF POTTING MATERIAL AND THEY SHALL NOT SHOW ANY DEFECT DUE TO THE POTTING PROCESS, SUCH AS BENDS, KINKS, PLATING DAMAGE, ETC
  - ALL ENCAPSULATED UNITS SHALL BE PERMANENTLY MARKED PER ND1002019 AS INDICATED IN TABLE
  - THERE SHALL BE A MINIMUM ENCAPSULATION THICKNESS OF .003
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

WASTE

1		SEE TABLE		TRANSISTOR, 70-5		1	
QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>G.A. Zappini</i> DATE <i>10 June 62</i>				TRANSISTOR, SILICON, POTTED			
CHECKED <i>G.A. Zappini</i> DATE <i>12 June 62</i>							
APPROVAL <i>W.D. Zappini</i> DATE <i>8/6/62</i>							
APPROVAL <i>G.A. Zappini</i>				NASA APPROVAL <i>W.D. Zappini</i>			
MIT APPROVAL				CODE IDENT NO. SIZE			
MIT APPROVAL <i>George J. Wulfsberg</i>				C 1003089			
SCALE 4/1				SHEET 1 OF 1			



CLASS B RELEASE TDR No. 01460 DATE 4-5-

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL CONNECTIONS TO BE MADE BY WELDING PER NID002005
3. WIRING STANDARDS FOR WELDED UNITS IN ACCORDANCE WITH NID002003
4. WHITE DOT INDICATES LEAD TO BE CUT AT D80
5. BLACK DOT INDICATES LEAD TO BE CUT AT S80
6. ENCAPSULATE MODULE PER NID 1002036 (STYCAST 1090)
7. AR DENOTES AS REQUIRED
8. DO NOT ENCAPSULATE AREAS MARKED A

✕	IC6692	SCHEMATIC	
AR	IC6678-4	WIRE,ELEC .032 DIA	
AR	IC66757-1	WIRE,ELEC .010 X .020	
AR	IC66776-21	INSULATION,SLEEVING	
45	IC66721	D.O.D.E	
AR	IC66755-79	CAPACITOR .6 BUF 35V 10%	
2	IC66750	RESISTOR FIXED FILM .74W ±.5%	
1	IC62156	B.C.CK,COMPONENT	
QTY	PART OR IDENTIFYING NO	DESCRIPTION	
		NON-FLUORESCENT CH	

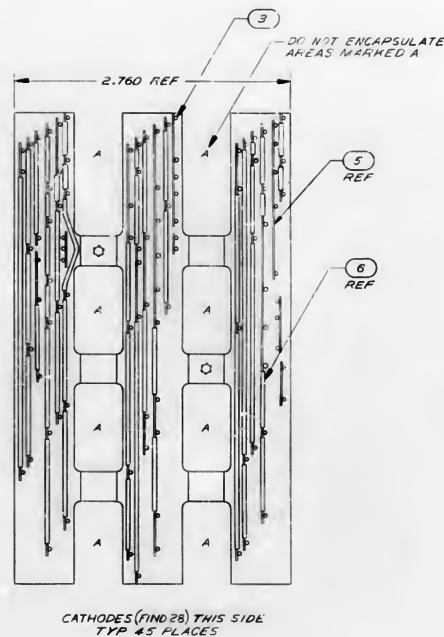
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± .005 ± .0005 ± .0001		SITY INSTRUMENTATION LAB 1000 S. 10TH ST. DENVER, CO 80202 ORDERED <u>10/2/83</u> 6-3-83 APPROVED <u>[Signature]</u> APPROVAL		LISTED BY MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING MATERIAL		SUBASSEMBLY KEYBOARD MODULE (AGC KEYBOARD)			
1003097	HEAT TREATMENT	NASA APPROVAL <u>[Signature]</u> DATE <u>6-5-83</u>	CODE IDENT NO E	SIZE E	NASA DRAWING NO E 1003095
NEXT ABY	USED ON	TEST POINTS	TEST APPROVAL <u>[Signature]</u>	SCALE 2:1	SHEET 1 OF 1
APPLICATION					



SET Y INSTRUMENTATION LAB Cambridge, Mass. DRAWN BY: <i>W. J. ...</i> DATE: <i>7-21-64</i> CHECKED BY: <i>W. J. ...</i> APPROVAL: <i>W. J. ...</i> APPROVAL: <i>W. J. ...</i> MASS APPROVAL: <i>W. J. ...</i> SET APPROVAL: <i>W. J. ...</i>		LIST OF MATERIALS  MANNED SPACECRAFT CENTER HOUSTON, TEXAS  KEYWORD: MODULAR ASSEMBLY (D17) AGC DSKE, NAV  CODE IDENT NO: _____ SIZE: _____ NASA DRAWING NO: <b>1003097</b> SCALE: <i>1/16"</i> WT: _____ SHEET: <i>1</i> OF <i>2</i>	
---	--	---	--

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-3-7032

(B) THIS SHEET ADDED

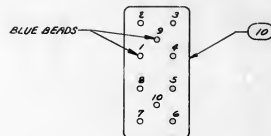


INACTIVE AFTER SYSTEM NO.7,  
SUPERSEDED BY 1003548

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7032

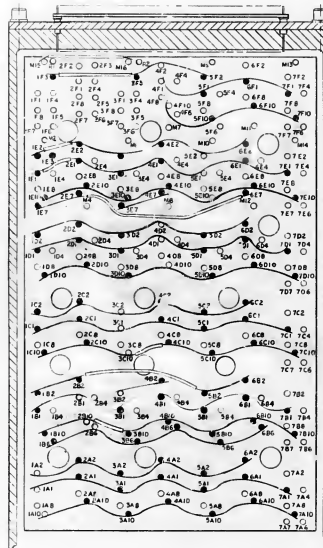




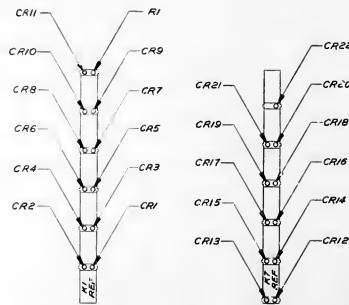


DETAIL J  
SCALE 4/1  
TYP PIN DESIGNATIONS  
OF K6, K12, AND K18

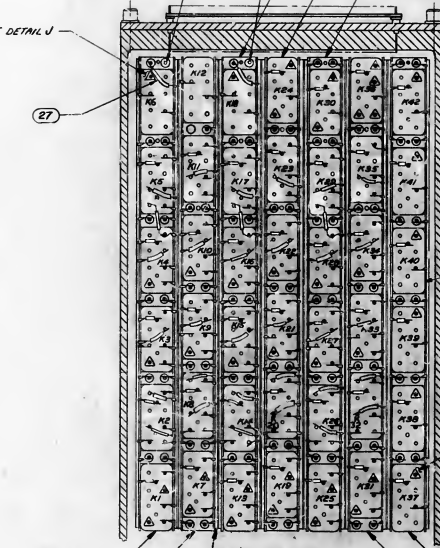
DETAIL K  
SCALE 4/1  
TYP PIN DESIGNATIONS  
OF K1 THRU K5, K7 THRU K11  
K13 THRU K17, & K19 THRU K42



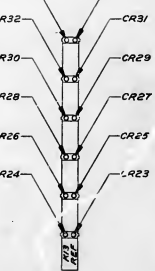
SECTION B-B



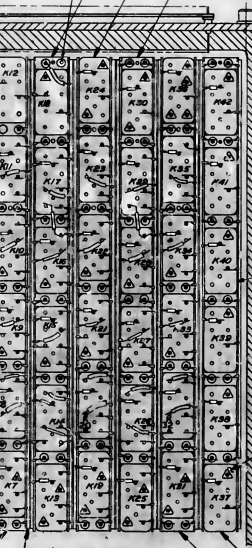
DETAIL A  
DIODE REFERENCE  
SIGNATIONS ONLY  
SCALE 1/1



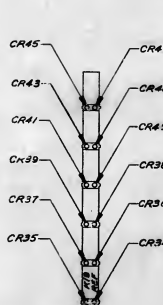
STICK 1  
SEE DETAIL A—  
SEE DETAIL B—  
STICK 2



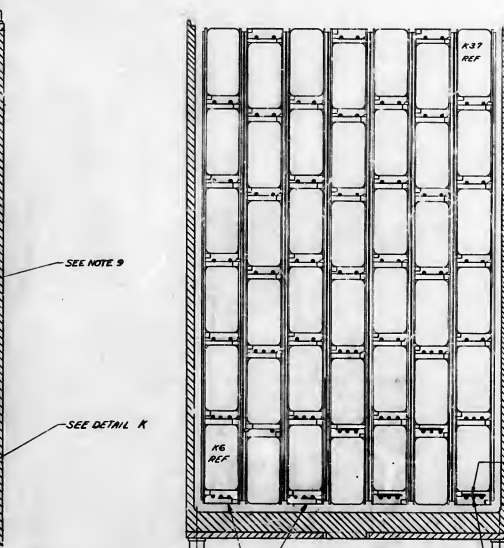
DETAIL C  
FOR DIODE REFERENCE  
DESIGNATIONS ONLY  
SCALE 1/1



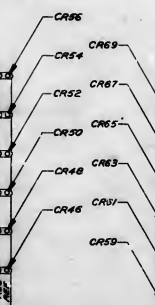
-PITCH NO.1 REF  
THIS END ALL STICKS



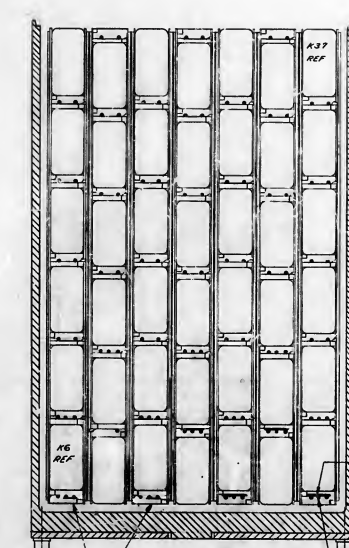
DETAIL D  
FOR DIODE REFERENCE  
DESIGNATIONS ONLY  
SCALE 1/1



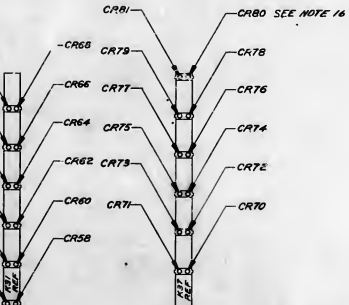
STICK 7  
SEE DETAIL G



DETAIL  
FOR DIODE REFERENCE  
DESIGNATIONS ONLY  
SCALE 1/1



SECTION D-D



DETAIL F  
FOR DIODE REFERENCE  
DESIGNATIONS ONLY  
SCALE 1/1

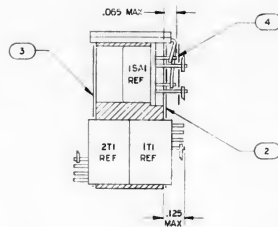
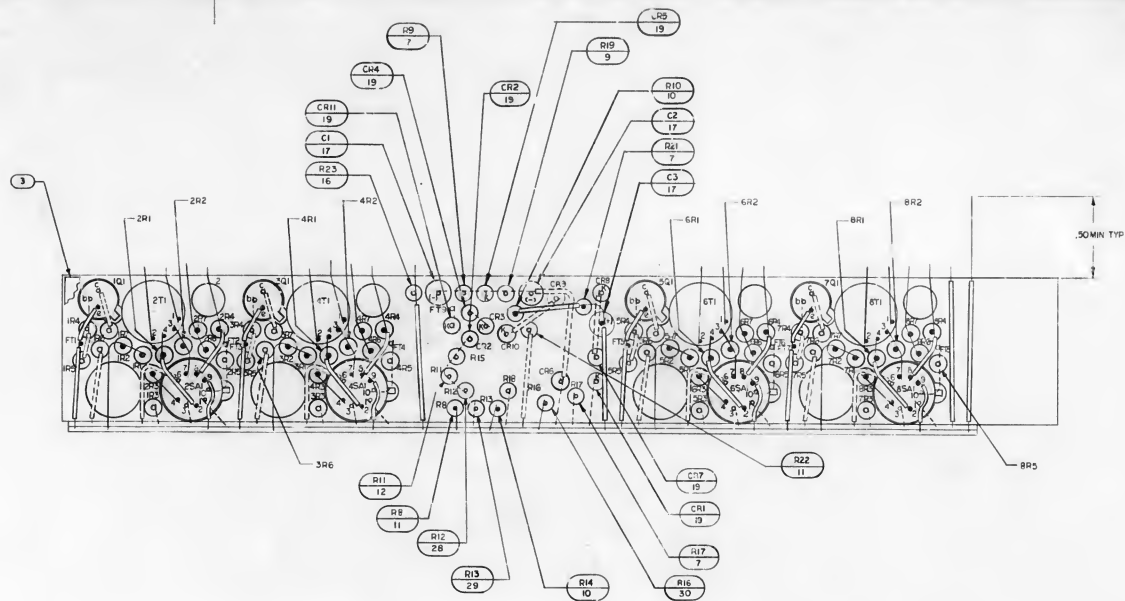
REVISONS			DATE	APPROVED
6	CLASS A RACIAL TDR	0717		
7	REVISED PER TDR	0716		
8	REVISED PER TDR			
9	REVISED PER TDR	0714		
10	REVISED PER TDR	0705		
11	REVISED PER TDR 0707			
12	DNE PER CHM CHM			
13	REVISED PER TDR 0810			
14	REVISED PER TDR			
15	REVISED PER TDR 1039			
16	ON EVM CHM			
17	REVISED PER TDR			
18	DRUGS CHM			
19	REVISED PER TDR 1102			
20	DRUGS CHM			
21	REVISED PER TDR 1102			
22	DRUGS CHM			
23	REVISED PER TDR 1367A			
24	DRUGS CHM			
25	REVISED PER TDR 1368A			
26	DRUGS CHM			
27	REVISED PER TDR 1495			
28	DRUGS CHM			

[illegible]

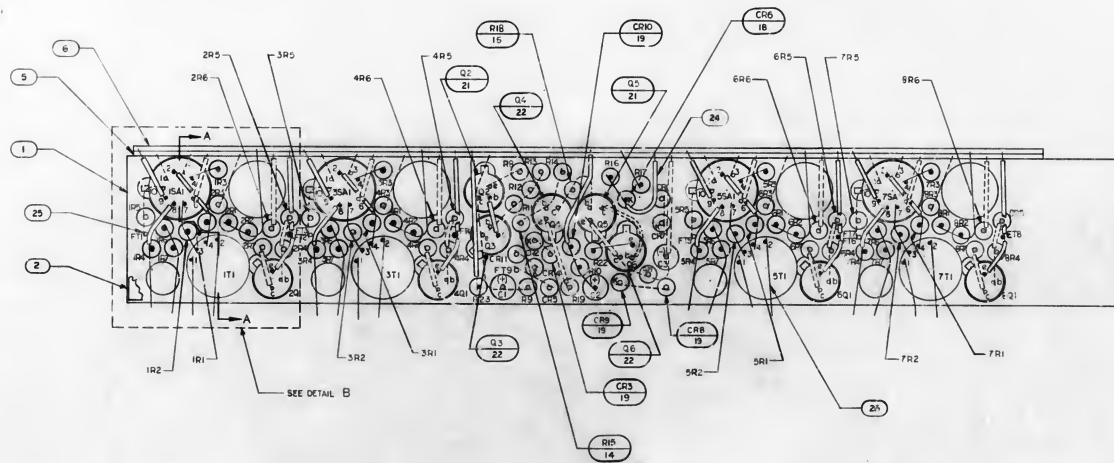
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: <u>0.005</u> FRACTIONS DECIMALS ANGLES HOLE LOCATIONS: <u>0.005</u> OTHER LOCATIONS: <u>0.010</u> HOLE DRILLING: <u>0.005</u> OTHER DRILLING: <u>0.010</u> MATERIAL: <u>ALUMINUM 6061-T6</u>		MT INSTRUMENTATION LAG DRAWN BY: <u>0.005</u> CHECKED BY: <u>0.005</u> APPROVED BY: <u>0.005</u> DATE: <u>0.005</u>		LITH OF: <u>0.005</u> MANNED SPACECRAFT CENTER HOUSTON TEXAS RELAY MODULE ASSEMBLY AGC DSKY, NAV AND MAIN	
HEAT TREATMENT: <u>0.005</u>		COORD. GENT NO: <u>0.005</u>		1003098 1003098	
NEXT STEP: <u>0.005</u>		TENS. FINISH: <u>0.005</u> MT APPROVAL: <u>0.005</u> NET APPROVAL: <u>0.005</u>		SCALE: <u>2/1</u> SHEET: <u>2</u> OF <u>2</u>	



THIS DRAWING IS THE PROPERTY OF THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE GOVERNMENT OF THE UNITED STATES OF AMERICA.

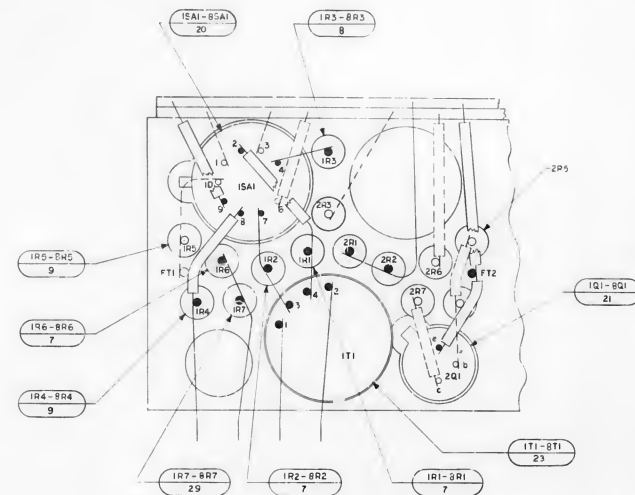


SECTION A-A

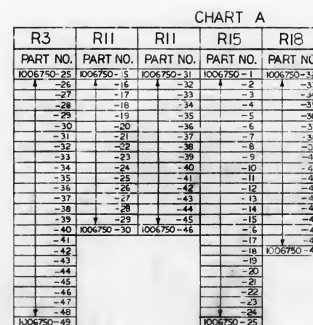


- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ALL CONNECTIONS TO BE MADE BY WELDING PER NDI000003
  3. WHITE DOT INDICATES LEAD TO BE CUT FOR FIRST LEVEL WIRING
  4. BLACK DOT INDICATES LEAD TO BE CUT FOR SECOND LEVEL WIRING
  5. DASHED LINES INDICATES FIRST LEVEL WIRING AND SOLID LINE INDICATES SECOND LEVEL WIRING
  6. STAKE ALL COMPONENTS PER NDI000009
  7. R INDICATES CATHODE SIDE OF DIODE
  8. A/R DENOTES AS REQUIRED
  9. FT DENOTES FEEDTHRU
  10. VALUE TO BE DETERMINED BY ELECTRICAL TEST
  11. RA, RB, RC, & RD TO BE SELECTED FROM CHART A

R3	R11
PART NO.	PART NO.
1006750-25	1006750-15
-26	-16
-27	-17
-28	-18
-29	-19
-30	-20
-31	-21
-32	-22
-33	-23
-34	-24
-35	-25
-36	-26
-37	-27
-38	-28
-39	-29
-40	1006750-30
-41	-31
-42	-32
-43	-33
-44	-34
-45	-35
-46	-36
-47	-37
-48	-38
1006750-49	-39



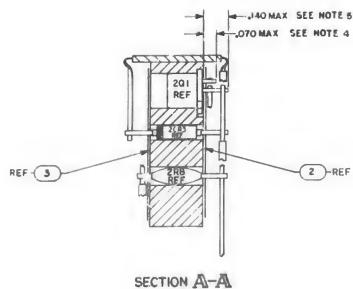
⑦ INACTIVE AFTER SYSTEMS NO.7  
FOR NEW PROCUREMENT USE 1003464



✕	K06118	SCHEMATIC	PC
1	1006760-58	RESISTOR	26
9	1006760-63	RESISTOR	26
1	1006760-56	RESISTOR	26
A/1	1006757-1	WIRE ELECTRICAL DIO X200	24
2/1	1006757-8	WIRE ELECTRICAL	24
A/11	1006762-12	TRANSFORMER SLEEVING	24
3	1006762-2	TRANSFORMER	24
3	1006762-5	TRANSFORMER	24
10	1006763-1	TRANSFORMER	24
8	1006769	SEMIC AMP LIFTER	24
10	1006751	DIODE	24
1	1006758	DIODE	24
3	1006755-35	CAPACITOR	10
1	1006750-98	RESISTOR	10
1	SEE NOTE 10	RESISTOR	10
1	SEE NOTE 7	RESISTOR	14
1	SEE NOTE 10	RESISTOR	14
2	1006750-18	RESISTOR	14
1	1006750-30	RESISTOR	14
7	1006750-30	RESISTOR	14
6	SEE NOTE 10	P-45000	14
2	1006750-24	RESISTOR	14
1	1003444-7	MATRIX ASSY	18
1	1003452	MATRIX ASSY	18
1	1002259-7	INSULATOR	18
1	1004480-1	INSULATOR	18
1	1004480-2	INSULATOR	18
Q71	PRINT OR REWORKING INFO	REWORK/REPLACE OR REWORKING INFO	18

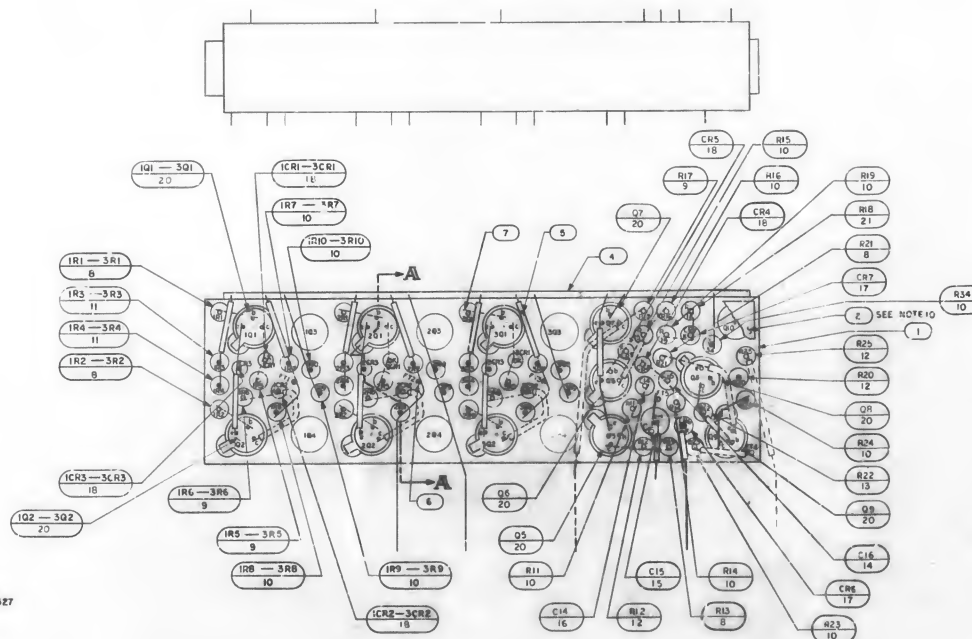
		UNP. OFFENSES SPEC'D OFFENSES ARE IN BOXES TOLERANCES IN FRACTIONS DECIMALS APPLS		N.E.T. INSTRUMENTATION L&E COORDINATE		UNIT OF MEASUREMENT HOURS, YEARS	
		DO NOT REP. IT IS DRAWS SERIALS		DRAWN: <i>10/24/78</i> DATE: <i>10/24/78</i> APPROVAL: <i>[Signature]</i> DATE: <i>10/24/78</i>		INTERNAL SPACECRAFT CENTER	
		REPLY TREATMENT		ERASABLE SENSE AMP B13 - 814 MODULE USE ASSUMED			
100338	100346	FINAL TOWER		NAME APPROVAL: <i>W. H. 1243</i>		SCALE: 1/1 J 100340	
REPLY UNIT USED ON				UNIT APPROVAL: <i>W. H. 1243</i>			
APPLICATION							





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. START FIND NO.8 THRU FIND NO.20 PER ME10 000000
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ME10 002008
4. @ WHITE DOT INDICATES LEAD TO BE CUT FOR FIRST LEVEL WIRING
5. @ BLACK DOT INDICATES LEAD TO BE CUT FOR SECOND LEVEL WIRING
6. DASHED LINES INDICATE FIRST LEVEL WIRING AND SOLID LINE INDICATE SECOND LEVEL WIRING
7. K1 CENOTES CATHODE SIDE OF DIODE
8. F1T DENOTES FEED THRU
9. A1T CENOTES AS REQUIRED
10. ON FIND NO.2 AND FIND NO.3 FIRST LEVEL WIRING ONLY IS SHOWN, WITH UNPEELED VIRE, SOLD, AND SLEEVED WIRE SHOWN DASHED

[illegible][illegible]

1



REVISIONS 044

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
		FRACTIONS      DECIMALS      ANGLES
		±                    ±                    ±
		DO NOT SCALE THIS DRAWING MATERIAL
		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO RESPONSIBILITY FOR ANY OMISSIONS OR ERRORS. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE DATA AND TO BE AWARE THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LIMITING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE ANY OF THE RELATED THEREIN.

PART NO.	FIND NO. 1 TRANSISTOR NO.	DOT COLOR
1003520-1	1006752	WHITE
1003520-2	1006753	RED

1003520

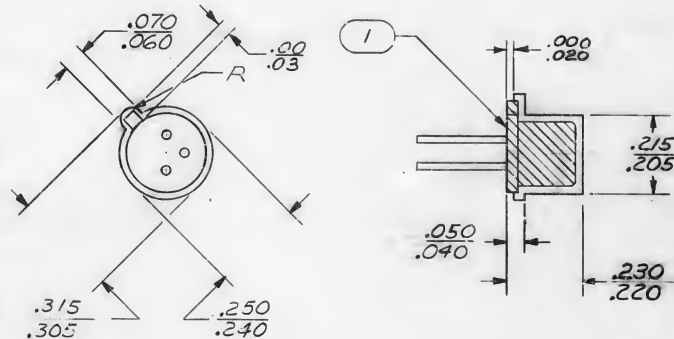
REVISIONS 02399			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 03627	10-3-63	W
B	REVISED PER TDRR 07625 DR @ Mather CHK JPC	9 MAR 64	JPC
C	REVISED PER TDRR 13684 DR @ Mather CHK JPC	11/1/64	JPC

COLOR DOT PER TABLE  
APPROX  $\frac{1}{16}$  DIA

MARKING VIEW

# NOTES:

1. ELECTRICAL REQUIREMENTS
  - A. ALL TRANSISTORS AFTER ENCAPSULATION, SHALL HAVE THEIR ELECTRICAL ACCEPTANCE REQUIREMENTS WITHIN THE LIMITS SET BY THE ORIGINAL SCD
2. CONSTRUCTION REQUIREMENTS
  - A. ENCAPSULATE PER ND1002183
  - B. ALL LEADS ARE TO BE FREE OF POTTING MATERIAL AND THEY SHALL NOT SHOW ANY DEFECT DUE TO THE POTTING PROCESS, SUCH AS, BENDS, KINKS, PLATING DAMAGE, ETC
  - C. ALL ENCAPSULATED UNITS SHALL BE PERMANENTLY MARKED PER ND1002019 AS INDICATED IN TABLE
- D. THERE SHALL BE A MINIMUM ENCAPSULATION THICKNESS OF .003
3. IDENTIFY PER MIL-STD-130



1	SEE TABLE	TRANSISTOR, TO-18	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINC NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Ed. Dray</i> DATE <i>June 63</i> CHECKED <i>R. R. Brown</i> <i>9/1/63</i> APPROVAL <i>W. B. Jones</i> <i>8/1/63</i> APPROVAL <i>J. P. Dray</i> <i>5/1/67</i>		TRANSISTOR, SILICON, POTTED	
NASA APPROVAL <i>W. B. Jones</i> <i>9/1/63</i> MIT APPROVAL <i>W. B. Jones</i> <i>9/1/63</i>		CODE IDENT NO. <b>C</b>	NASA DRAWING NO. 1003520
APPLICATION		SCALE 4/1	WT SHEET / OF 1





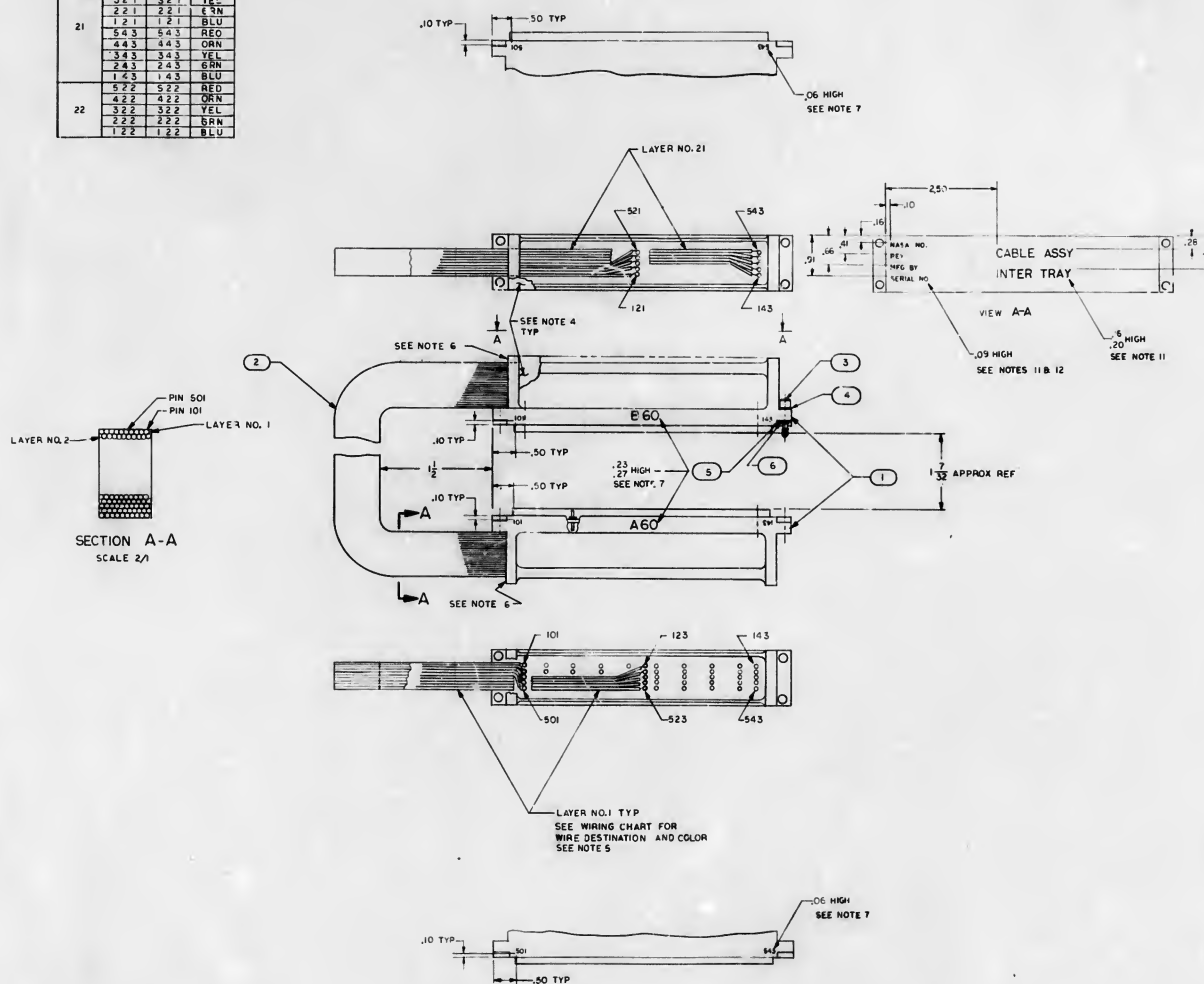




LAYER NO.	FROM	TO	COLOR OF WIRE
	860	860	W
	401	401	BLU
	301	301	YEL
	201	201	BLU
	101	101	BLU
	523	523	R/D
	423	423	GRN
	323	323	YEL
	223	223	BLN
	123	123	BLU
	502	502	GRN
	402	402	GRN
	302	302	YEL
	202	202	GRN
	102	102	GRN
	524	524	R/D
	424	424	GRN
	324	324	Y
	224	224	BLN
	124	124	BLU
	503	503	GRN
	403	403	GRN
	303	303	YEL
	203	203	GRN
	103	103	Y
	525	525	P/O
	425	425	GRN
	325	325	GRN
	225	225	GRN
	125	125	GRN
	504	504	GRN
	404	404	GRN
	304	304	YEL
	204	204	GRN
	104	104	BLU
	526	526	RED
	426	426	GRN
	326	326	YEL
	226	226	GRN
	126	126	GRN
	505	505	GRN
	405	405	GRN
	305	305	YEL
	205	205	GRN
	105	105	BLU
	527	527	RED
	427	427	GRN
	327	327	YEL
	227	227	GRN
	127	127	GRN
	506	506	RED
	406	406	GRN
	306	306	YEL
	206	206	GRN
	106	106	BLU
	528	528	RED
	428	428	GRN
	328	328	YEL
	228	228	GRN
	128	128	GRN
	507	507	RED
	407	407	GRN
	307	307	YEL
	207	207	GRN
	107	107	BLU
	529	529	RED
	429	429	GRN
	329	329	YEL
	229	229	GRN
	129	129	GRN
	508	508	RED
	408	408	GRN
	308	308	YEL
	208	208	GRN
	108	108	BLU
	530	530	RED
	430	430	GRN
	330	330	YEL
	230	230	GRN
	130	130	GRN
	509	509	RED
	409	409	GRN
	309	309	YEL
	209	209	GRN
	109	109	BLU
	531	531	RED
	431	431	GRN
	331	331	YEL
	231	231	GRN
	131	131	GRN
	510	510	RED
	410	410	GRN
	310	310	YEL
	210	210	GRN
	110	110	GRN
	532	532	RED
	432	432	GRN
	332	332	YEL
	232	232	GRN
	132	132	GRN

LAYER NO.	FROM	TO	COLOR OF WIRE
	A60	B60	
	411	411	GRN
	311	311	VEL
	211	211	GRN
	111	111	BLU
	653	533	RED
	433	433	GRN
	333	333	GRN
	233	233	GRN
	133	133	BLU
	412	412	RED
	312	312	VEL
	212	212	GRN
	112	112	BLU
	634	534	RED
	434	434	GRN
	334	334	GRN
	234	234	GRN
	134	134	BLU
	413	413	RED
	313	313	VEL
	213	213	GRN
	113	113	BLU
	535	535	RED
	435	435	GRN
	335	335	GRN
	235	235	GRN
	135	135	BLU
	414	414	RED
	314	314	VEL
	214	214	GRN
	114	114	BLU
	636	536	RED
	436	436	GRN
	336	336	GRN
	236	236	GRN
	136	136	BLU
	415	415	RED
	315	315	VEL
	215	215	GRN
	115	115	BLU
	537	537	RED
	437	437	GRN
	337	337	GRN
	237	237	GRN
	137	137	BLU
	416	416	RED
	316	316	VEL
	216	216	GRN
	116	116	BLU
	538	538	RED
	438	438	GRN
	338	338	GRN
	238	238	GRN
	138	138	BLU
	517	517	RED
	417	417	RED
	317	317	VEL
	217	217	GRN
	117	117	BLU
	539	539	RED
	439	439	GRN
	339	339	GRN
	239	239	GRN
	139	139	BLU
	518	518	RED
	418	418	RED
	318	318	VEL
	218	218	GRN
	118	118	BLU
	540	540	RED
	440	440	GRN
	340	340	VEL
	240	240	GRN
	140	140	BLU
	519	519	RED
	419	419	GRN
	319	319	VEL
	219	219	GRN
	119	119	BLU
	541	541	RED
	441	441	GRN
	341	341	VEL
	241	241	GRN
	141	141	BLU
	520	520	RED
	420	420	GRN
	320	320	VEL
	220	220	GRN
	120	120	BLU
	542	542	RED
	442	442	GRN
	342	342	VEL
	242	242	GRN
	142	142	BLU

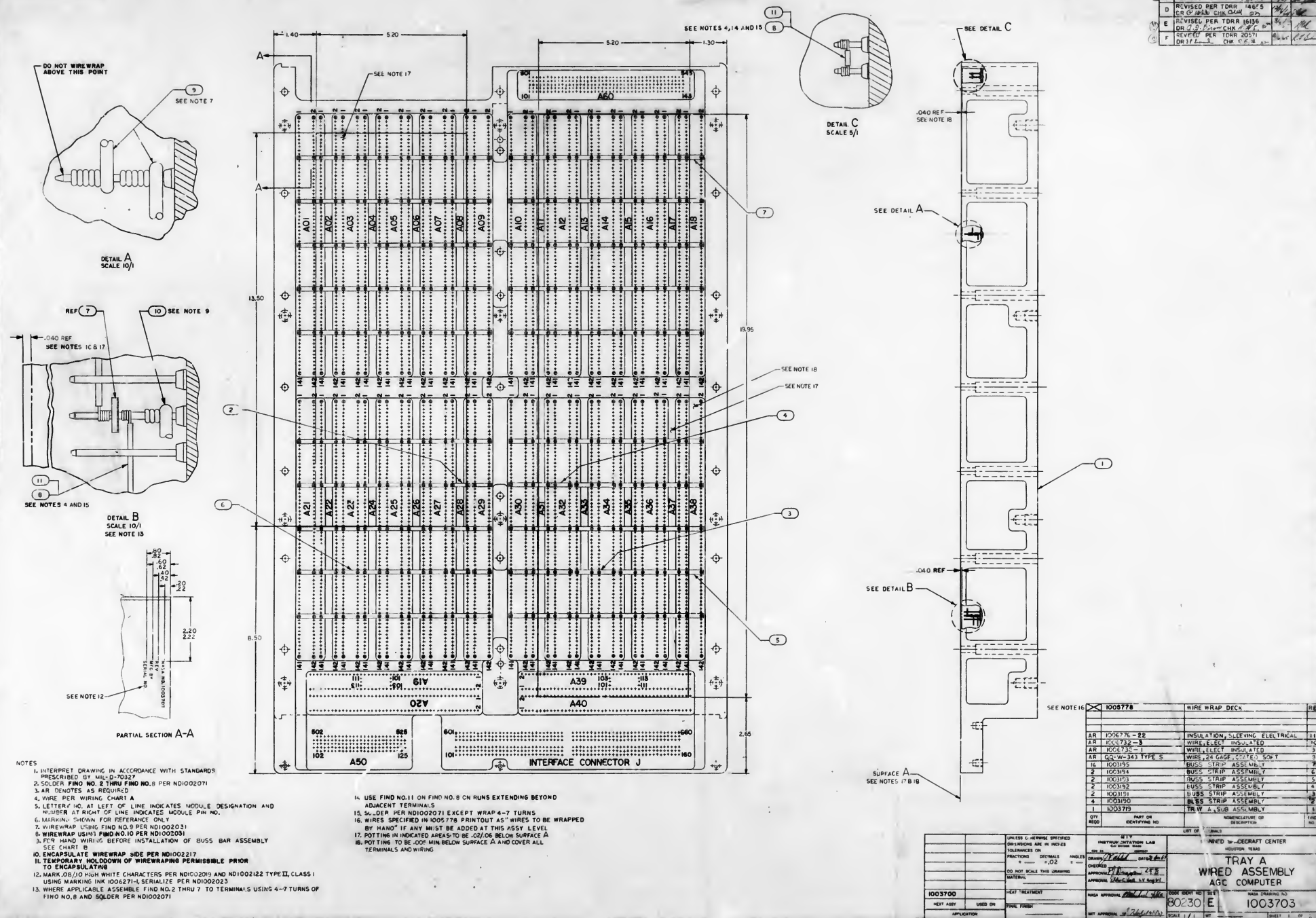
WINNERS CHART			
LAYER NO.	FROM A 60	TO B 60	COLOR OF WIRE
21	5 21	5 21	RED
	4 21	4 21	ORN
	3 21	3 21	YEL
	2 21	2 21	GRN
	1 21	1 21	BLU
	5 43	5 43	RED
	4 43	4 43	ORN
	3 43	3 43	YEL
	2 43	2 43	GRN
	1 43	1 43	BLU
22	5 22	5 22	RED
	4 22	4 22	ORN
	3 22	3 22	YEL
	2 22	2 22	GRN
	1 22	1 22	BLU



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FABRICATE PER NDI002032
3. ALL DIMENSIONS ARE REQUIRED\*
4. ENDS TO INDICATE INDICATED AREAS PER NDI002036
5. STRIP ALL CONDUCTORS .080
6. END INSULATION TO BE FLAT WITH THIS SURFACE
7. MARK WHITE CHARACTER PER NDI002019 & NDI002122 TYPE II CLASS 1 USING MARKING INK  
75171-I, CAPITALIZE, EXCEPT AS SHOWN
8. JUDGE TOLERANCES PER NDI002036
9. SOLDER PER NDI002071
10. X DENOTES LENGTH IN FEET
11. MARK WHITE CHARACTERS PER NDI002019 AND NDI002122 TYPE II CLASS 2, USING MARKING INK 75171-I
12. SERIALIZE PER NDI002033

8	MS164353-4015	WASHING RETAINING EXT. S	5
9	14004546-3	WASHER, PLAT	6
10	14004548-1	WASHER, SILE	7
11	14004549-1	SCREW JACKING	8
12	40008292-003	WIRE ELECTRICAL, P.L.A. C	9
13	1200378	CONNECTION ASSY	10
14		NUMERICAL VALUE	11
15		DESCRIPTION	12
16	UNIT		13
17	PROD		14
18			15
19			16
20			17
21			18
22			19
23			20
24			21
25			22
26			23
27			24
28			25
29			26
30			27
31			28
32			29
33			30
34			31
35			32
36			33
37			34
38			35
39			36
40			37
41			38
42			39
43			40
44			41
45			42
46			43
47			44
48			45
49			46
50			47
51			48
52			49
53			50
54			51
55			52
56			53
57			54
58			55
59			56
60			57
61			58
62			59
63			60
64			61
65			62
66			63
67			64
68			65
69			66
70			67
71			68
72			69
73			70
74			71
75			72
76			73
77			74
78			75
79			76
80			77
81			78
82			79
83			80
84			81
85			82
86			83
87			84
88			85
89			86
90			87
91			88
92			89
93			90
94			91
95			92
96			93
97			94
98			95
99			96
100			97

REV	DESCRIPTION	DATE	BY	CHK
A	REVISED AND UPGRADED TO CLASS A PER TORR	2/8/77	WJ	WJ
B	REVISED PER TORR	2/22/77	WJ	WJ
C	REVISED PER TORR	2/22/77	WJ	WJ
D	REVISED PER TORR	14/6/75	WJ	WJ
E	REVISED PER TORR	10/3/75	WJ	WJ
F	REVISED PER TORR	20/5/71	WJ	WJ





6

5

4

3

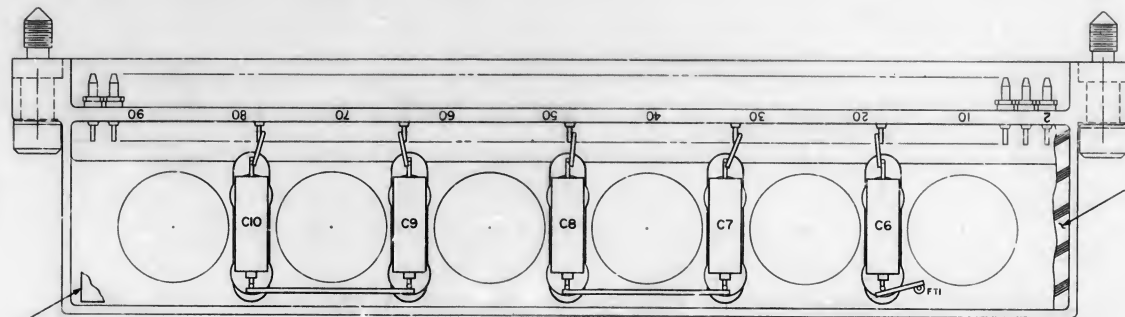
2

1

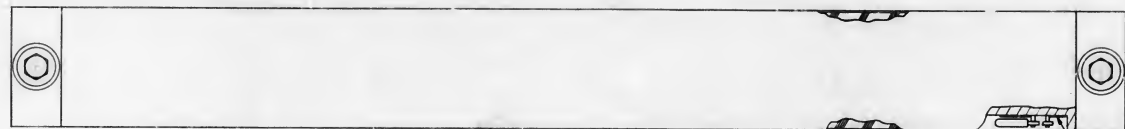
1003703

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
A		REVISED AND UPGRADED TO CLASS A PER TORR 1350				
B		REVISED PER TORR 1377	AF			
C		REVISED PER TORR 1378	AF			
D		REVISED PER TORR 14655	1509			
E		REVISED PER TORR 14136	1515			
F		REVISED PER TORR 2551	1517			

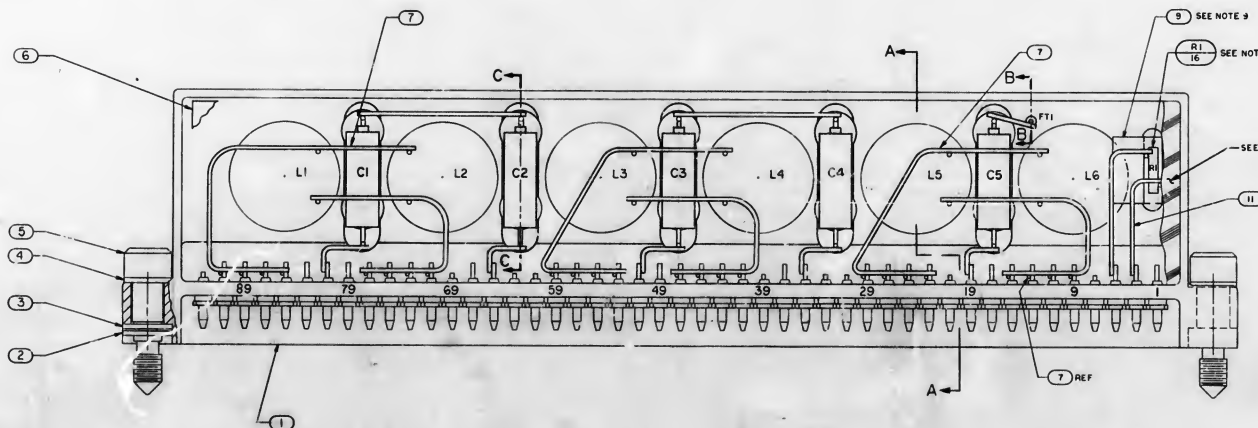
CHART A				
FROM	TO	FIND NOS	WIRE INSL	SIGNAL NAME
A60/501	A60/401	8	NONE	OVDC
A60/501	A60/401			+ 3B
A60/502	A60/402			OVDC
A60/502	A60/402			+ 3B
A60/503	A60/403			OVDC
A60/503	A60/403			+ 3B
A60/504	A60/404			OVDC
A60/504	A60/404			+ 3B
A60/505	A60/405			OVDC
A60/505	A60/405			+ 3B
A60/506	A60/406			OVDC
A60/506	A60/406			+ 3B
A60/507	A60/407			OVDC
A60/507	A60/407			+ 3B
A60/508	A60/408			OVDC
A60/508	A60/408			+ 3B
A60/509	A60/409			OVDC
A60/509	A60/409			+ 3B
A60/510	A60/410			OVDC
A60/510	A60/410			+ 3B



SEE NOTE 3



SEE NOTE 8



SEE NOTE 9

SEE NOTE 9

SEE NOTE 3

SEE NOTE 3

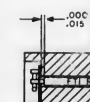
SEE NOTE 3

SEE NOTE 3

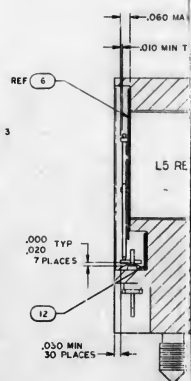
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. WELD PER ND1002005 & ND1002003
  3. ENCAPSULATE PER ND1002002, BLACK POLYURETHANE FOAM, INDICATED AREAS ONLY, REMOVE ALL FLASHING
  4. MARK .08/.10 HIGH WHITE CHARACTERS PER ND1007019 AND ND1002122 TYPE II CLASS 2, SERIALIZE PER ND1002023 USING MARKING INK 1006271-1
  5. MARK .04/.06 HIGH WHITE CHARACTERS PER ND1002019 AND ND1002122 TYPE II CLASS 1 USING MARKING INK 1006271-1
  6. AD DENOTES AS REQUIRED
  7. STAKE ALL COMPONENTS PER ND1002009 EXCEPT AS NOTED
  8. TRIM MYLAR AT ASSY
  9. BOND PER ND1002004 TYPE I
  10. SEAL INSULATORS & TERMINALS TO HEADER PER ND1002004 TYPE II



PARTIAL SEC

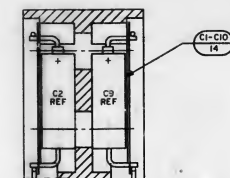
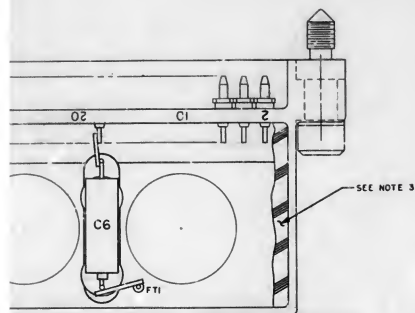


PARTIAL SEC

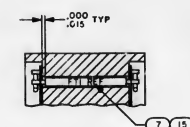
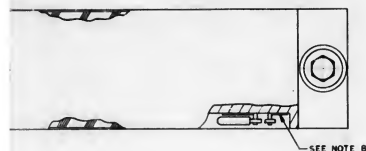


SECTION A-A

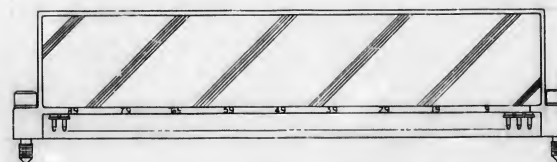
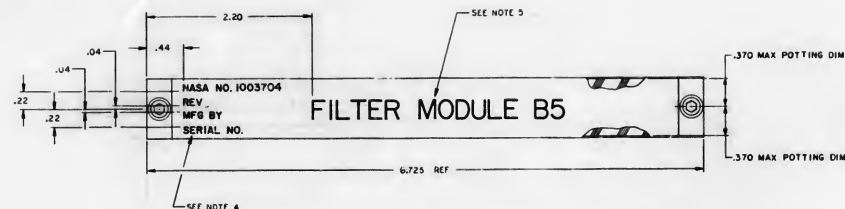




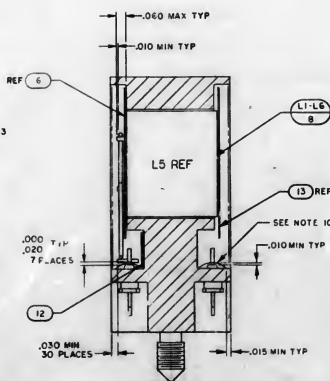
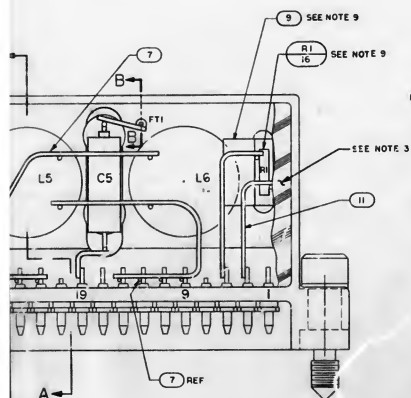
PARTIAL SECTION C-C



PARTIAL SECTION B-B



MARKING VIEW  
SCALE 2/1



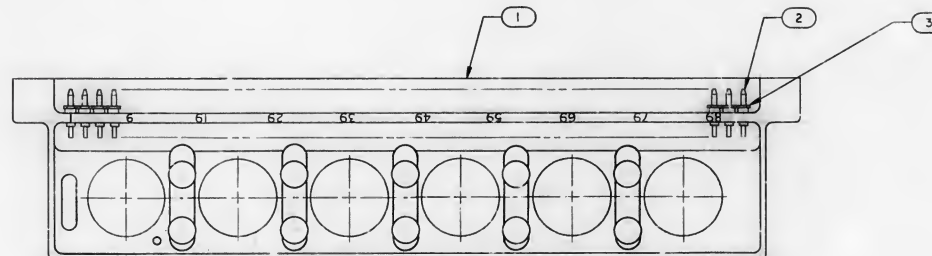
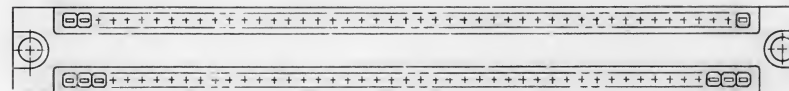
SECTION A-A

REV	DESCRIPTION	DATE	BY	CHK
A	REVISED PER TORR 11227			
B	REVISED PER TORR 11275			
C	REVISED PER TORR 12036			
D	REVISED PER TORR 12204			
E	REVISED PER TORR 12217			
F	REVISED PER TORR 12217			
G	REVISED PER TORR 16111			
H	REVISED PER TORR 16111			

QTY	PART OR IDENTIFYING NO.	DESCRIPTION	REF.
1	1006712-5	RESISTOR, TEMP SENSITIVE, W	16
AR	1006776-21	INSULATION, SLEEVING	15
ID	1006755-79	CAPACITOR	14
1	1004737	INSULATOR	13
AR	1006826-12	TAPE, ELECTRICAL	12
AR	1006797-1	WIRE, ELECTRICAL	11
AR	1006774-22	INSULATION, SLEEVING	10
1	1004738	INSULATOR	9
6	1006798	INDUCTOR	8
AR	1006797-11	WIRE, ELEC	7
1	1004723	INSULATOR	6
2	1004579-1	SCREW, JACKING	5
2	1004546-1	WASHER, FLAT	4
2	1004546-3	WASHER, FLAT	3
2	MB18853-4015	WIRE, RETAINING, EXTERNAL	2
1	1003705	TRACER, HOLDING ASST	1

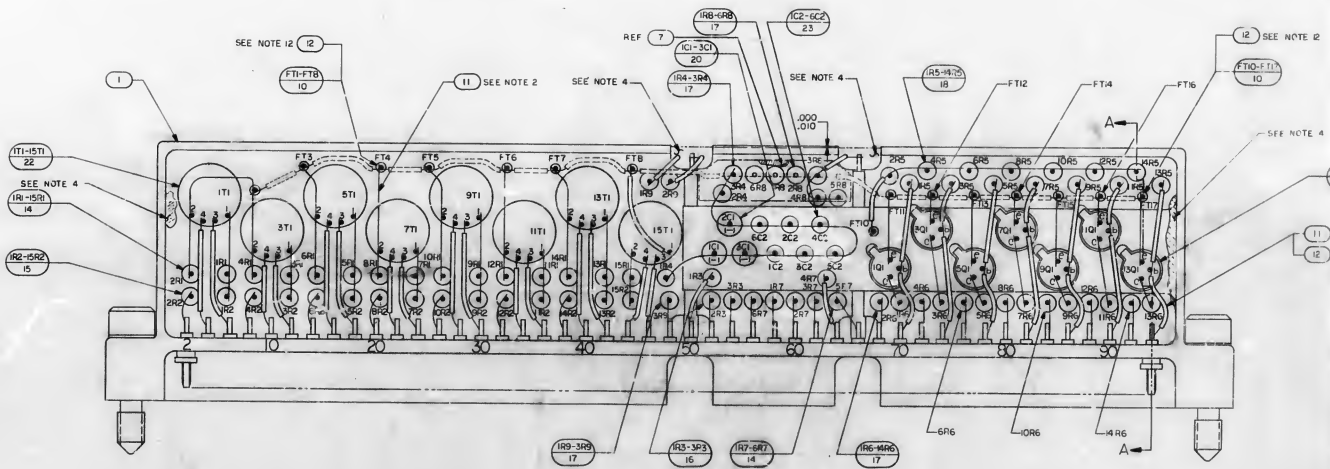
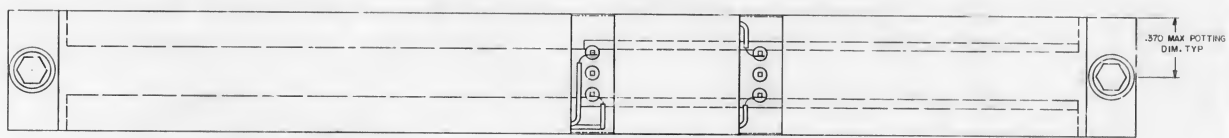
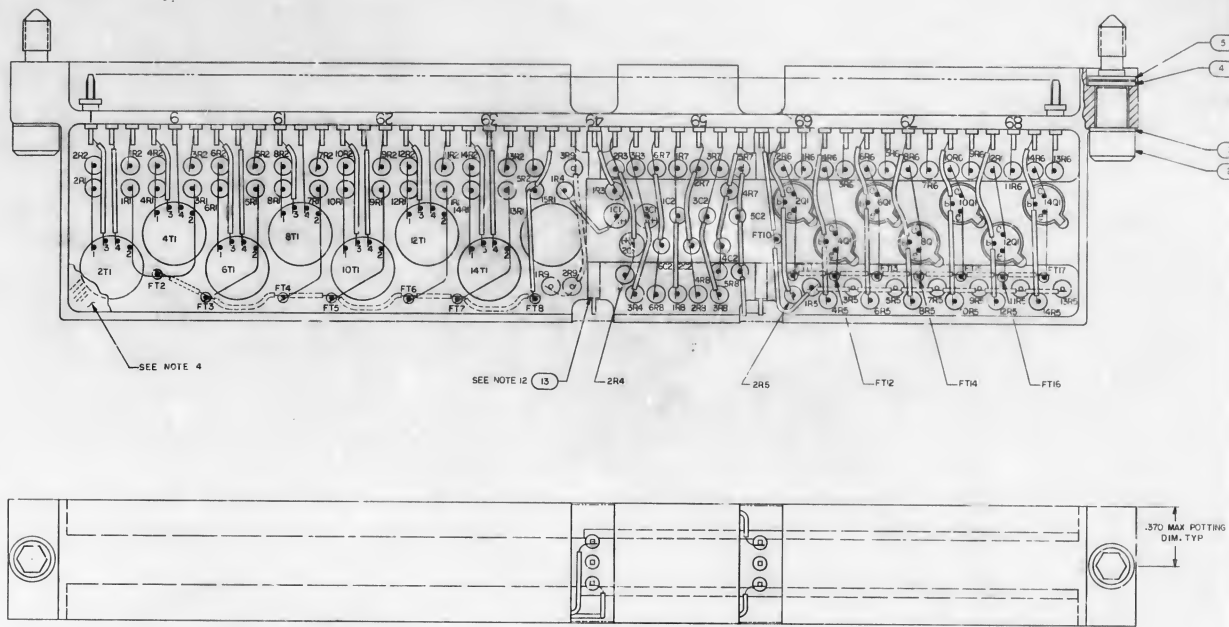
1003700 NEXT ASSY USED ON: _____ APPLICATION: _____		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: FINISHES: .005 HOLE: .010 DO NOT SCALE THE DRAWING DATE APPROVED: 10/26/66 BY: [Signature] TITLE: [Signature]		MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>FILTER MODULE B5</b> <b>ASSEMBLY</b> DATE: 10/26/66 BY: J TITLE: 1003704 SCALE: 4/1 SHEET: 1 OF 1	
---	--	--	--	--	--

REVISIONS 10729			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRA 11482	1/24/04	[Signature]
B	REVISED PER TDRA 13675	1/24/04	[Signature]

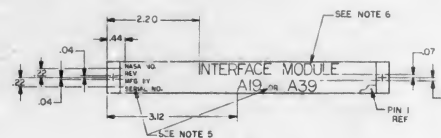
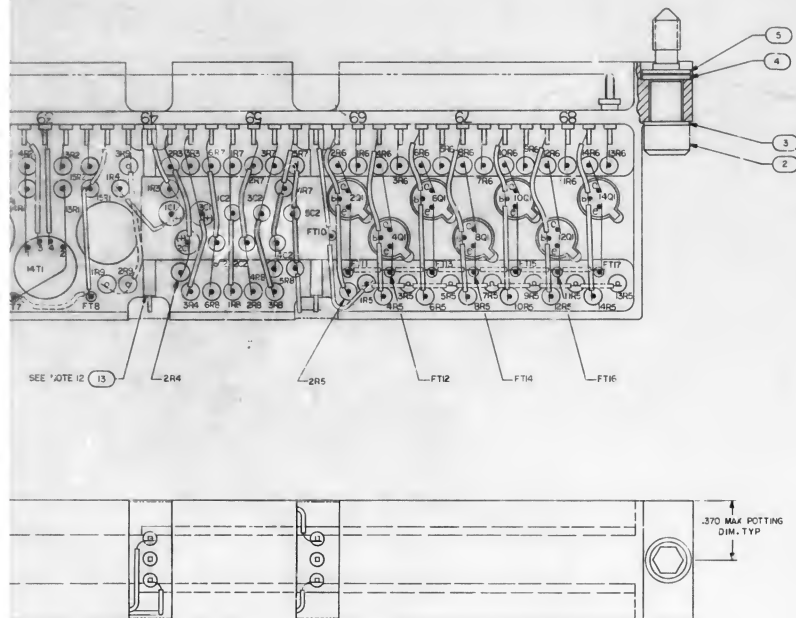


	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	M I T INSTRUMENTATION LAB COLUMBIA ROAD DALLAS, TEXAS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
TOLERANCES ON FRACTIONS DECIMALS *ANGLES	DRAWN Ed Drouin Date 10/26/68 CHECKED J. L. Smith Date 10/26/68 APPROVAL J. L. Smith Date 10/26/68	<b>HEADER HOUSING ASSEMBLY</b>	
DO NOT SCALE THIS DRAWING MATERIAL _____	APPROVAL Ed Drouin Date 10/26/68	<b>FILTER MODULE B5</b>	
HEAT TREATMENT _____	NASA APPROVAL Ed Drouin Date 10/26/68	CODE IDENT NO. / SEAL	NASA DRAWING NO.
1003704	FINAL FINISH _____	<b>D</b>	1003705
NEXT ASSY _____ USED ON _____	MIT APPROVAL J. L. Smith Date 10/26/68	SCALE 2/1	WT _____ SHEET 1 OF 1
APPLICATION _____			

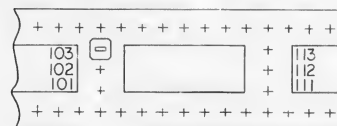




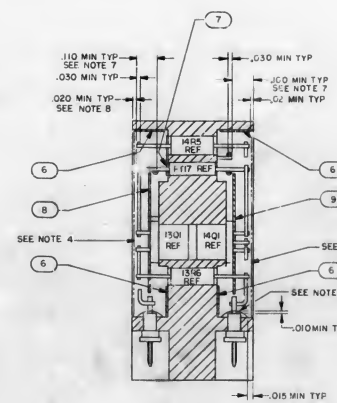
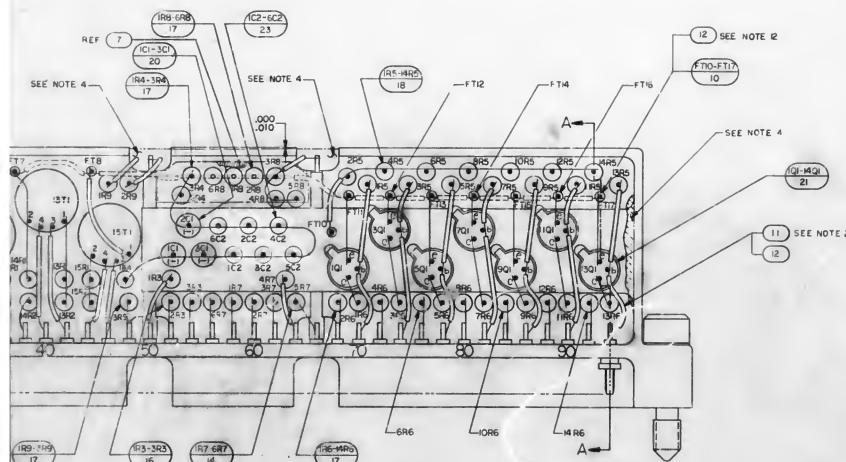
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. WELD PER ND1002005 AND ND1002003
  3. STAKE ALL RESISTORS, CAPACITORS, TRANSFORMERS, AND TRANSISTORS PER ND1002009
  4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) IN INDICATED AREAS ONLY
  5. MARK OR/IO HIGH WHT CHARACTERS PER ND1002019 AND ND1002122 TYPE II, CLASS 2
  6. UIC MARKING INK 1006271-1, SERIALIZE PER ND1002003
  7. WHITE DOT AND DOTTED LEADS INDICATE LOWER LEVEL WIRING
  8. WHITE DOT AND DOTTED LEADS INDICATE LOWER LEVEL WIRING
  9. BLACK DOT AND SOLID LEADS INDICATE UPPER LEVEL WIRING
  10. FT DENOTES FEED THRU
  11. AR DENOTES AS REQUIRED
  12. + INDICATES POSITIVE SIDE OF CAPACITOR
  13. FEED THRU AND TERMINAL GLEEVING TO BE .000 BELOW SURFACE OF HEATSINK
  14. SEAL TERMINALS & INSULATORS TO HEADER PER ND1002004 TYPE III



MARKING VIEW  
SCALE 1/1



VIEW B-B



SECTION A-A

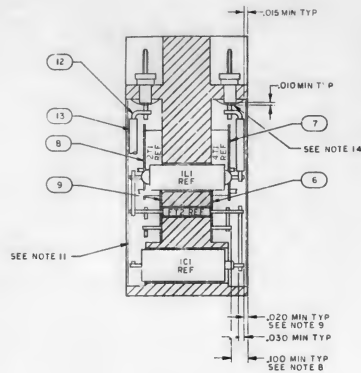
REV	DESCRIPTION	DATE	BY	CHK
A	REVIEW PER TORR	11/1/75		
B	REVIEWED PER TORR	12/23/75		
C	REVIEWED PER TORR	1/1/76		
D	REVIEWED PER TORR	1/1/76		
E	REVIEWED PER TORR	1/1/76		

REF	1003700	FLOW DIAGRAM AND SCHEMATIC	QTY
6	1006777-24	CAPACITOR	23
15	1006762-2	TRANSFORMER	62
16	1003350-0	TRANSISTOR	20
3	1006755-2	CAPACITOR	20
18	1006750-48	RESISTOR	18
25	1006750-39	RESISTOR	17
3	1006750-63	RESISTOR	16
15	1006750-24	RESISTOR	15
21	1006750-1	RESISTOR	16
18	1006776-20	INSULATION SLEEVING, ELECTRICAL	13
18	1006776-22	INSULATION SLEEVING, ELECTRICAL	12
18	1006757-1	WIRE, ELECTRICAL	11
18	1006757-8	WIRE, ELECTRICAL	10
1	1004712	INSULATOR	8
1	1004711	INSULATOR	8
1	1004710	INSUL	7
18	1006755-18	INSULATION TAPE, ELECTRICAL	6
2	M5 5633-4Q15	RING, RETAINING	4
2	1004546-3	WASHER, FLAT	4
2	1004546-1	WASHER, FLAT	4
2	1004579-1	SCREW, JACKING	2
1	1003712	HEADER, POLE 75, 550V	1

1003708

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES OF FRACTIONS DECIMALS ANGLES ° ' " ° ' " ° ' "		BY DATE CHECKED APPROVED		MATERIAL	
1003700		NEXT ASSEMBLY		USED ON	
APPLICATION		FINAL TEST		DATE	
1003700		1003700		1003700	
1003700		1003700		1003700	





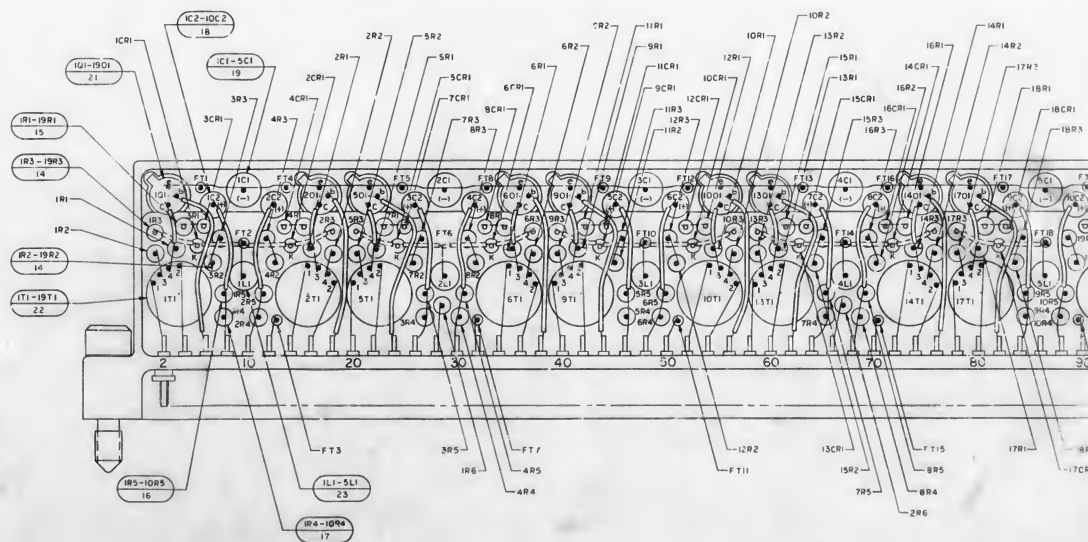
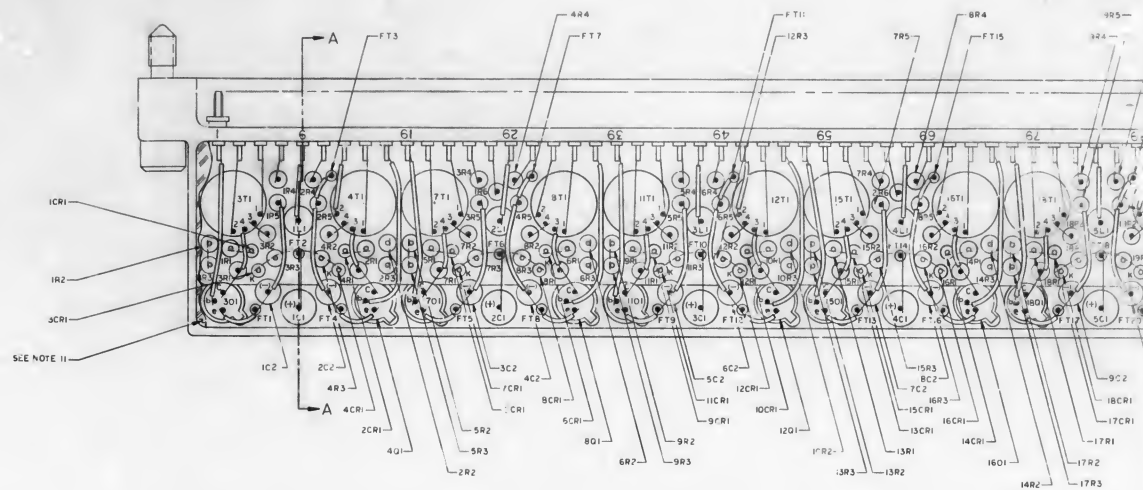
SECTION A-A

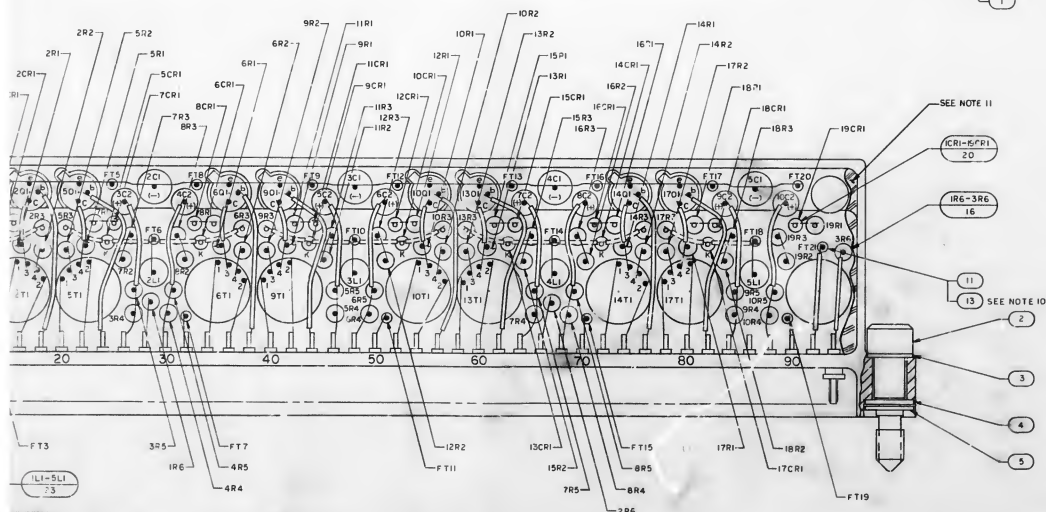
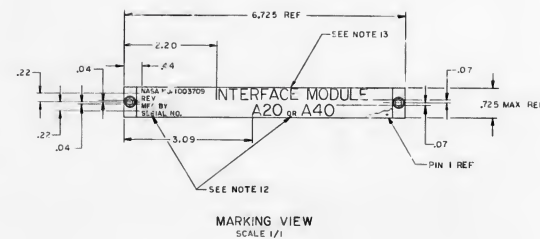


SECTION B-B

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD ALL CONNECTIONS PER NO1002005 AND NO1002003
3. SHOW ALL RESISTORS, CAPACITORS AND TRANSFORMERS AND DIODES PER NO1002009
4. F\* DENOTES FEEDTHRU
5. AR DENOTES AS REQUIRED
6. X\* DENOTES CATHODE SIDE OF DIODE
7. - DENOTES POSITIVE SIDE OF CAPACITOR
8. WHITE DOT AND DASHED LINE INDICATE LOWER LEVEL WIRING
9. - DENOTES DOT AND SOLID LINE INDICATE UPPER LEVEL WIRING
10. FEEDTHRU SLEEVE TO BE .000/.015 BELOW SURFACE OF HEATSINK
11. FEEDTHRU INSULATE MODULE PER NO1002002, BLACK POLYURETHANE FOAM, INDICATED AREA ONLY, REMOVE ALL FLASHING
12. MARK .08/.10 HIGH WHIT CHARACTERS PER NO1002009 AND NO1002122 TYPE II CLASS 2, USING MARKING INK 1006271-1, SERIALIZE PER NO1002003
13. MARK .24/.26 HIGH WHIT CHARACTERS PER NO1002019 AND NO1002122 TYPE II CLASS 2, USING MARKING INK 1006271-1
14. SEAL TERMINALS & INSULATORS TO HEADER PER NO1002004 TYPE II



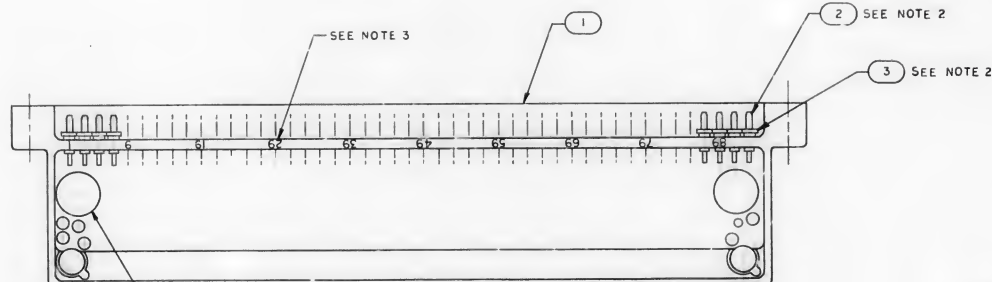
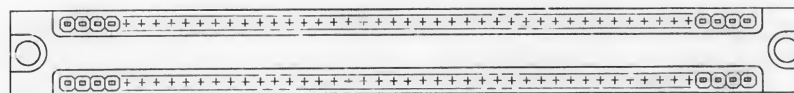


REF	1005702	FLOW DIAGRAM AND SCHEMATIC	
5	1010406-6	COIL, RF, CHOKE	2
19	1007662-2	TRANSFORMER, PULSE	2
19	1003202-1	TRANSFORMER, PULSED	2
19	1006751-5	DIODE	2
10	1006155-79	CAPACITOR	1
10	1006155-75	CAPACITOR	1
10	1006155-63	RESISTOR	1
10	1006155-59	RESISTOR	1
19	1007500-32	RESISTOR	1
38	1006750-8	RESISTOR	1
AR	1007676-22	INSULATION SLEEVING	13
AR	1005187-1	ELECTRICAL WIRE	13
AR	1007567-8	ELECTRICAL WIRE	13
19	1004709	INSULATOR, TRANSPARENT	1
1	1004708	INSULATOR	1
1	1004707	INSULATOR	1
1	1004706	INSULATOR	1
2	MS16133-4015	INSULATOR	2
2	1004946-3	RING, RETAINING EX. E	2
2	1004946-2	WASHER, FLAT	2
2	1004946-1	WASHER, FLAT	2
2	1004947-1	WASHER, LOCKING	2
1	1003711	HEADER HOUSING A, Y	1
QTY	PART OR DESCRIPTION INFO	NAME/NUMBER OR SYMBOLIC	FIG

1003790 HEAT TREAT      LIBED ON		HEAT TREATMENT FUEL TREATMENT		PART APPROVAL <i>John J. [Signature]</i>		STOCK PART NO.		SIZE J		PARTS DRAWING NO. 1033790	
APPLICATION		TEST APPROVAL <i>John J. [Signature]</i>		TEST APPROVAL <i>John J. [Signature]</i>		SCALE 1/1		DATE 11-11-70		DRAWN BY <i>John J. [Signature]</i>	



REVISIONS 10614			
SYM	DESCRIPTION	DATE	APP



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NO.2 TO FIND NO.3 PER ND1002136
3. MARK .060/.080 HIGH WHITE PER ND1002122 TYPE II CLASS I PER ND1002019
4. PARTIAL HOLE PATTERN SHOWN FOR ORIENTATION PURPOSES ONLY

— SEE NOTE 4

94	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
94	1006782-1	CONTACT, WRAPOST-MALE, MINIATURE	3
1	1004702	HEADER HOUSING	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FR NO

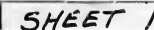
## LIST OF MATERIALS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS = .005 ANGLES =		<div>M I T</div> <div>INSTRUMENTATION LAB</div> <div>CHANGING NAME</div> <div>DATE</div> <div>ISS. NO.</div> <div>QUANTITY</div>		<div>MANNED SPACECRAFT CENTER</div> <div>HOUSTON, TEXAS</div>	
		DO NOT SCALE THIS DRAWING MATERIAL:		DRAWN <i>W. L. Gage</i> DATE <i>12/2/64</i> CHECKED <i>W. L. Gage</i> DATE <i>12/2/64</i> APPROVAL <i>W. L. Gage</i> DATE <i>12/2/64</i> APPROVAL <i>Edo. C. Noel</i> DATE <i>12/2/64</i>		HEADER HOUSING ASSY INTERFACE MODULE A20 OR A40	
1003709		HEAT TREATMENT		NASA APPROVAL <i>W. L. Gage</i>			
NEXT ASSY. USED ON		FINAL FINISH		MIT APPROVAL <i>W. L. Gage</i> DATE <i>12/2/64</i>		CCDC IDENT. NO. <div>D</div> SIZE <div>1003711</div>	
APPLICATION						SCALE 2/1 WT. SHEET 1 OF 1	





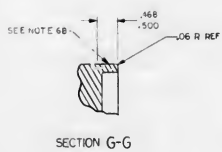
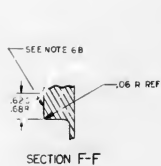
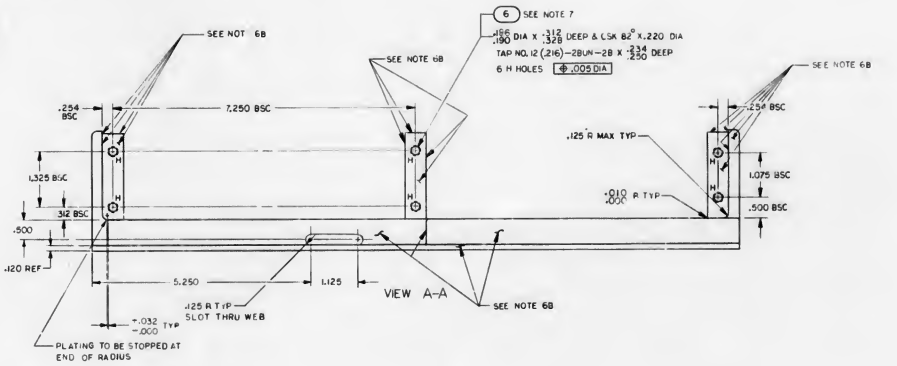
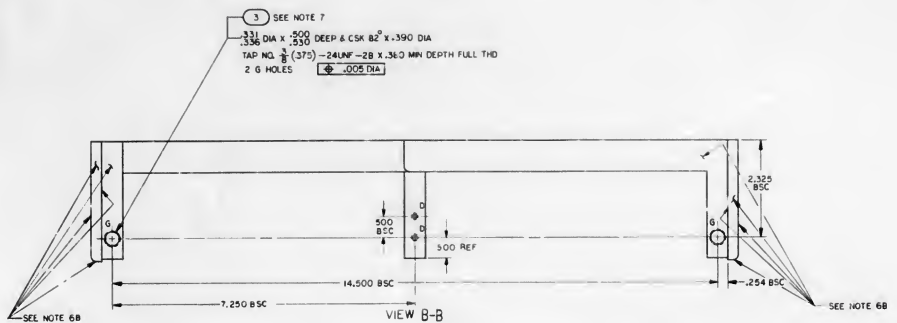
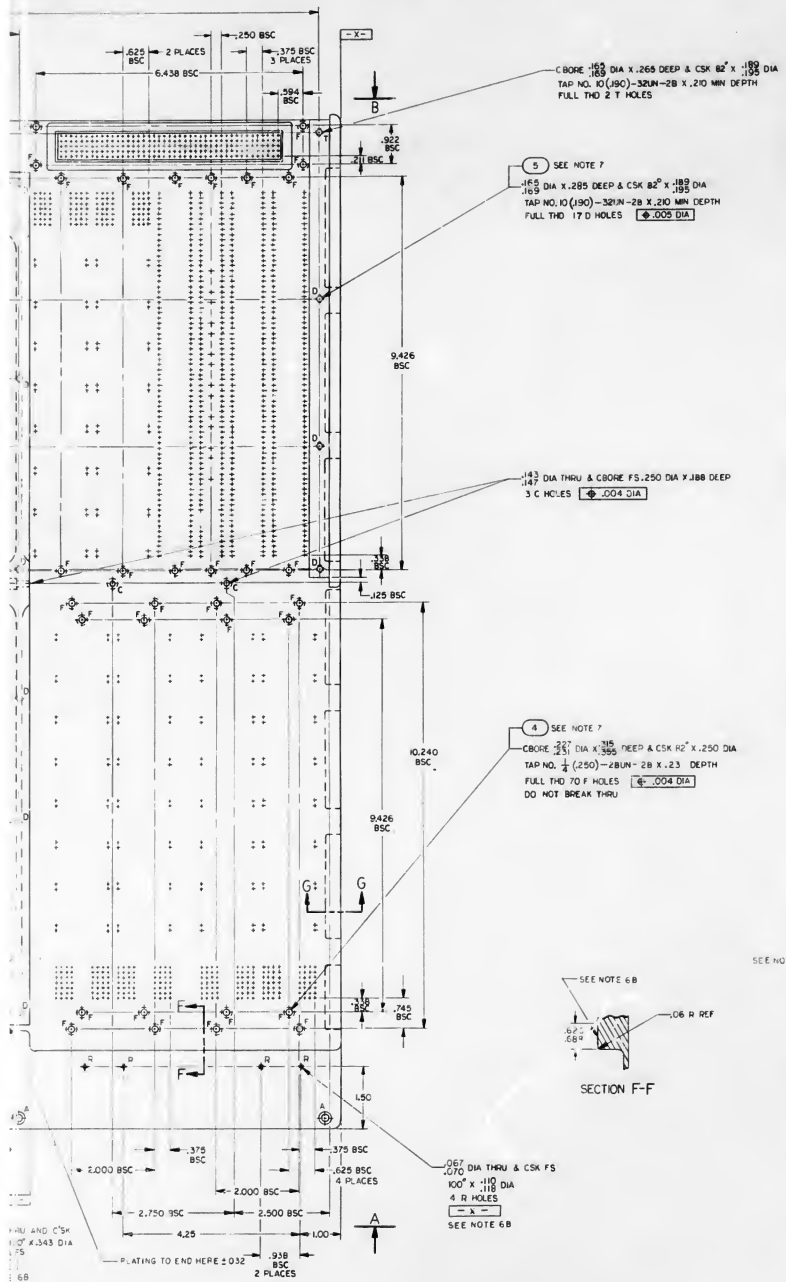
3	M521209-CO420	INSERT, SCREW THREAD	2
1	1003713-1	MID-PLATE, RIGHT SIDE, TRAY B	1
QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIN. NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DATE	CONTRACT		
DRAWN BY	DATE	MID-PLATE RIGHT SIDE TRAY B AGC COMPUTER	
CHECKED			
APPROVED			
APPROVAL			
NASA APPROVAL		CODE IDENT NO.	SIZE
			NASA DRAWING NO.
			1003713
MIT APPROVAL		SCALE	SHEET
		1/1	OF





3

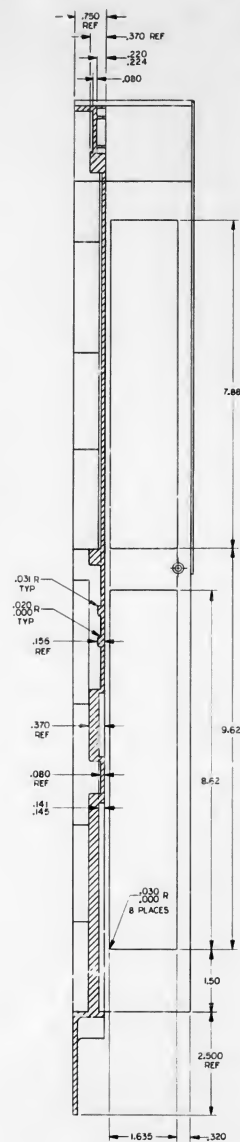
REVISIONS			
QTY	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UPGRADED TO CLASS A PER TORR 1903	10/20/04	OK
B	REVISED PER TORR 13150	10/20/04	OK
C	REVISED PER TORR 13291	10/20/04	OK
D	REVISED PER TORR 13600	10/20/04	OK
E	REVISED PER TORR 13875	10/20/04	OK
F	REVISED PER TORR 14025	10/20/04	OK
G	REVISED PER TORR 15040 DR 15040 INCH CR APPD	10/20/04	OK



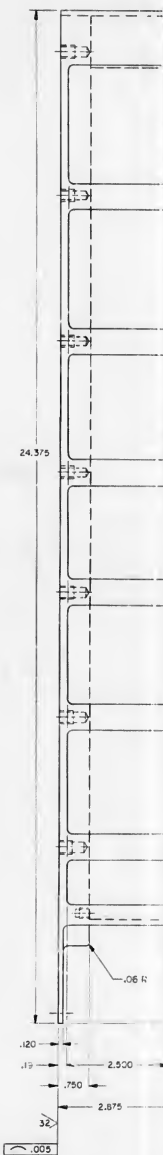
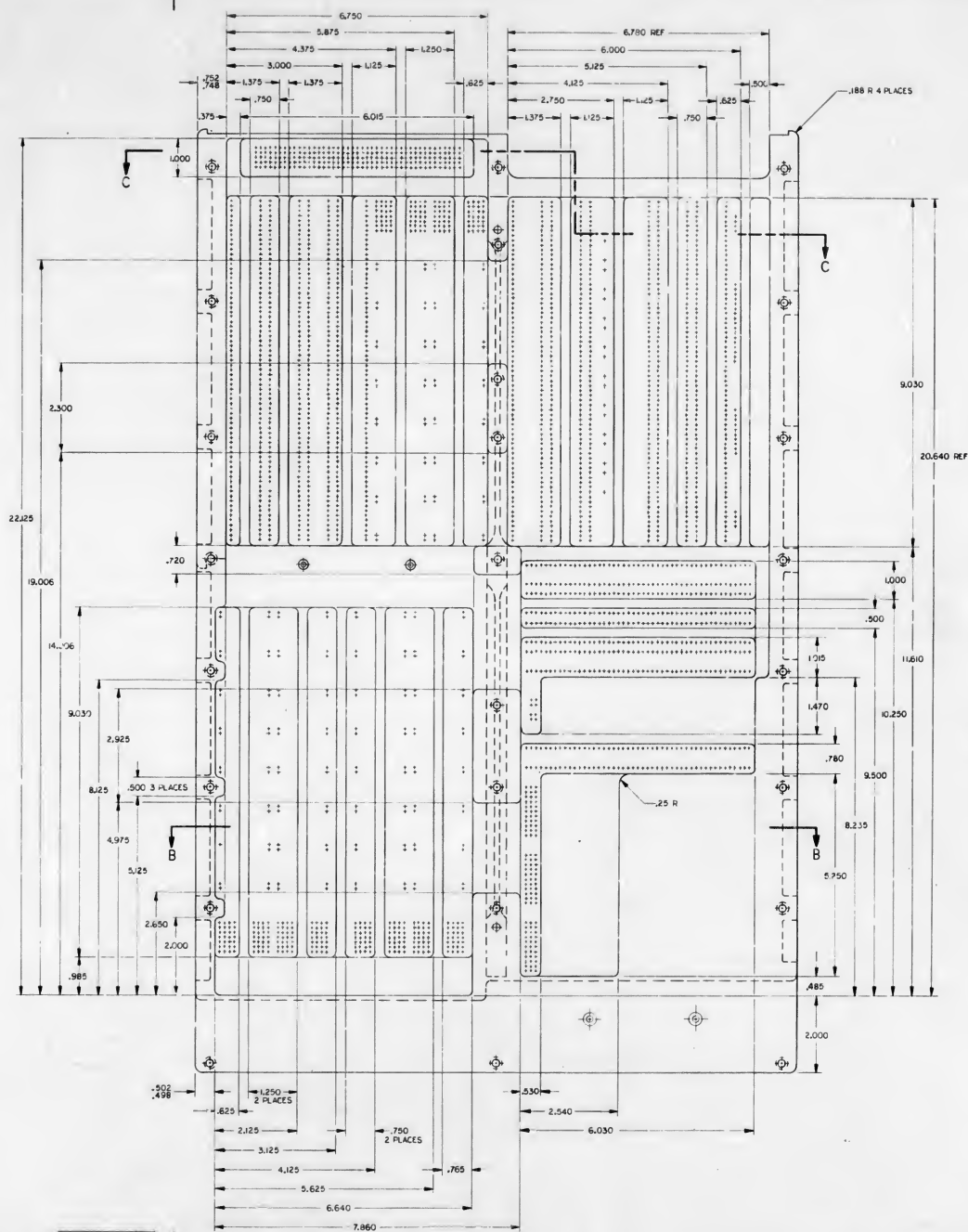
6	1006702-2	INSERT, THREADED, SELF-LOCKING	6
17	1006702-2	INSERT, THREADED, SELF-LOCKING	9
70	1006702-5	INSERT, THREADED, SELF-LOCKING	3
6	MC632-06L	WRENCH, OPEN END	4
22	NA51394CA-3L	INSERT, THREADED, SELF-LOCKING	2
	1003714-1	TRAY	1
QTY. REQD	PART OR IDENTIFYING NO	DESCRIPTION OR DISCRIPTION	PART NO

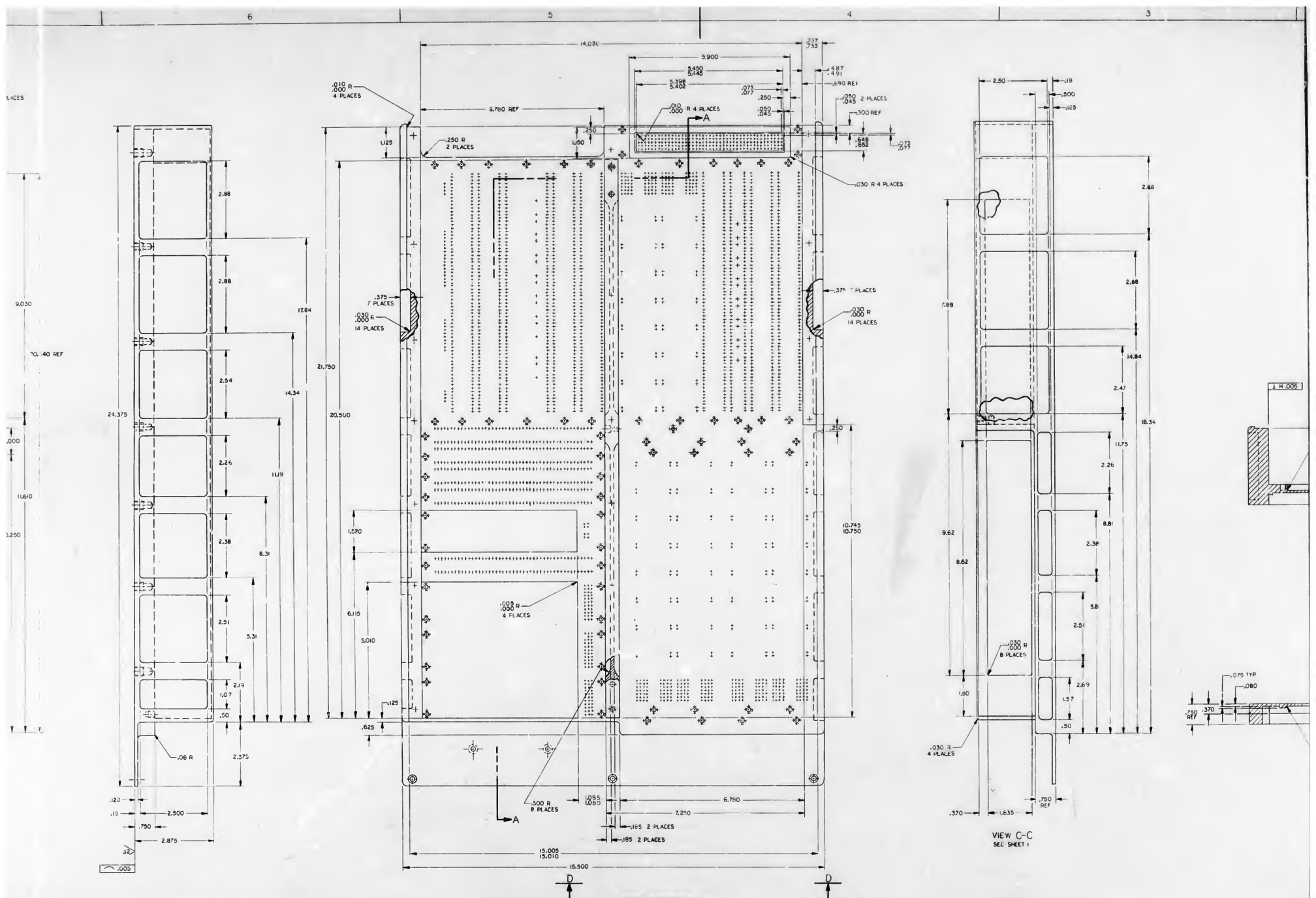
UNCLASSIFIED// <del>CONFIDENTIAL</del> DISSEMINATION AND USE POLARIZED ON FUNCTIONS - - <del>XXX-000</del> SPECIAL (DO NOT WRITE IN THESE SPACES) SEE NOTE 2		DTIC INFORMATION/STAFF LAB ( ) NAME <i>John Doe</i> DATE <i>05/01/80</i> APPROVAL <i>21 May 80</i> APPROVAL <i>John Doe</i> 21 May 80		EXEMPT FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION AUTHORITY: 25 USC 552 (a)(1) EXEMPTION CODE: 25X(1) NAMED SPY/CATCH CENTER (FOUR LETTER) TRAY 5 AGC COMPUTER	
(U//S) <input checked="" type="checkbox"/> B HEAT MAP USED ON APPLICATION		HEAT MAP QUILT NARR APPROVAL <i>John Doe</i> SPECIAL FILING SEE NOTE 8		BOX IDENT NO. DATE NADA GRADING NO. 100374 J SPECIAL <input checked="" type="checkbox"/> V <input checked="" type="checkbox"/> I SHEET 1 OF 2	





SECTION A-A

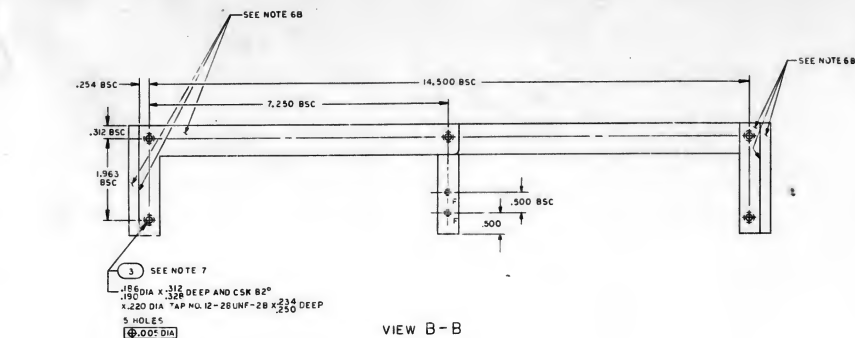




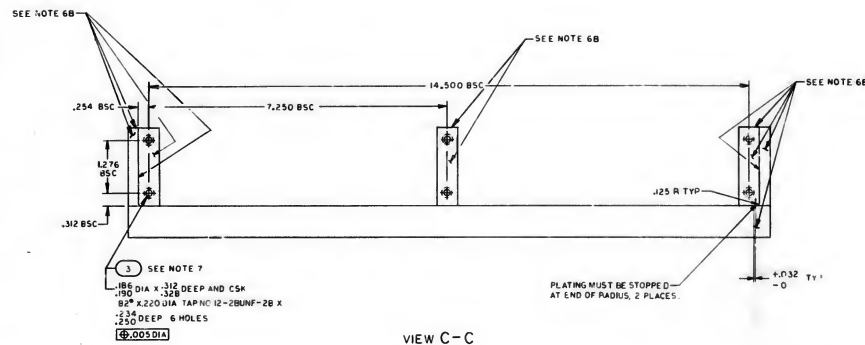


REVISED				
SN	DESCRIPTION	DATE	APPROVAL	
A	REVISED AND UPGRADED TO CLASS A PEP TORR 2963	4/24/68		
B	REVISED PFA TORR 13130	6/20/68		
C	REVISED PER TORR 13291	7/10/68		
D	REVISED PER TORR 3640	7/10/68		
E	REVISED PER TORR 1899	7/10/68		
F	REVISED PER TORR 58-2	7/10/68		
G	REVISED PER TORR 15069 DR 15069 CHK OUN APPD	7/10/68		

[illegible]



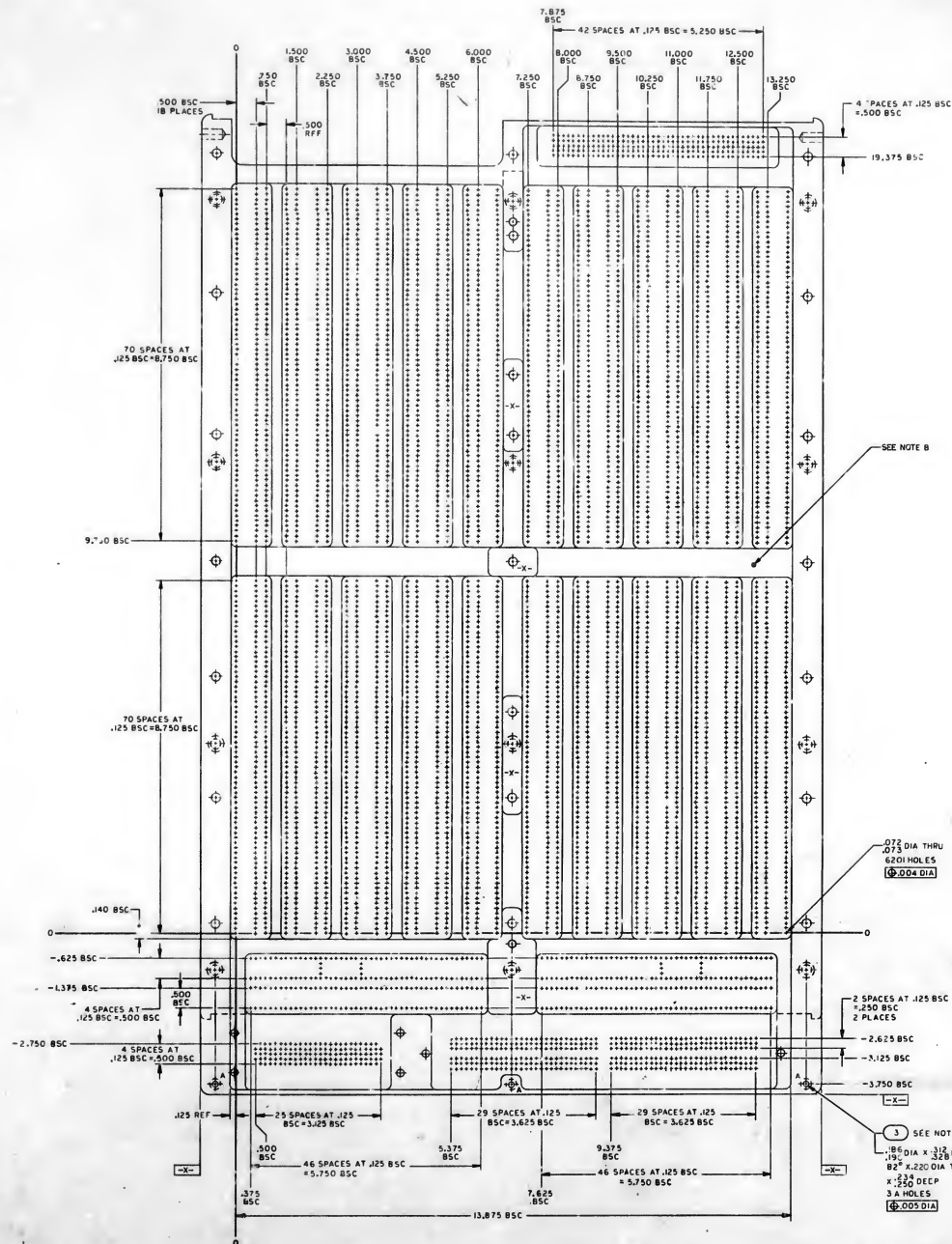
VIEW C-C



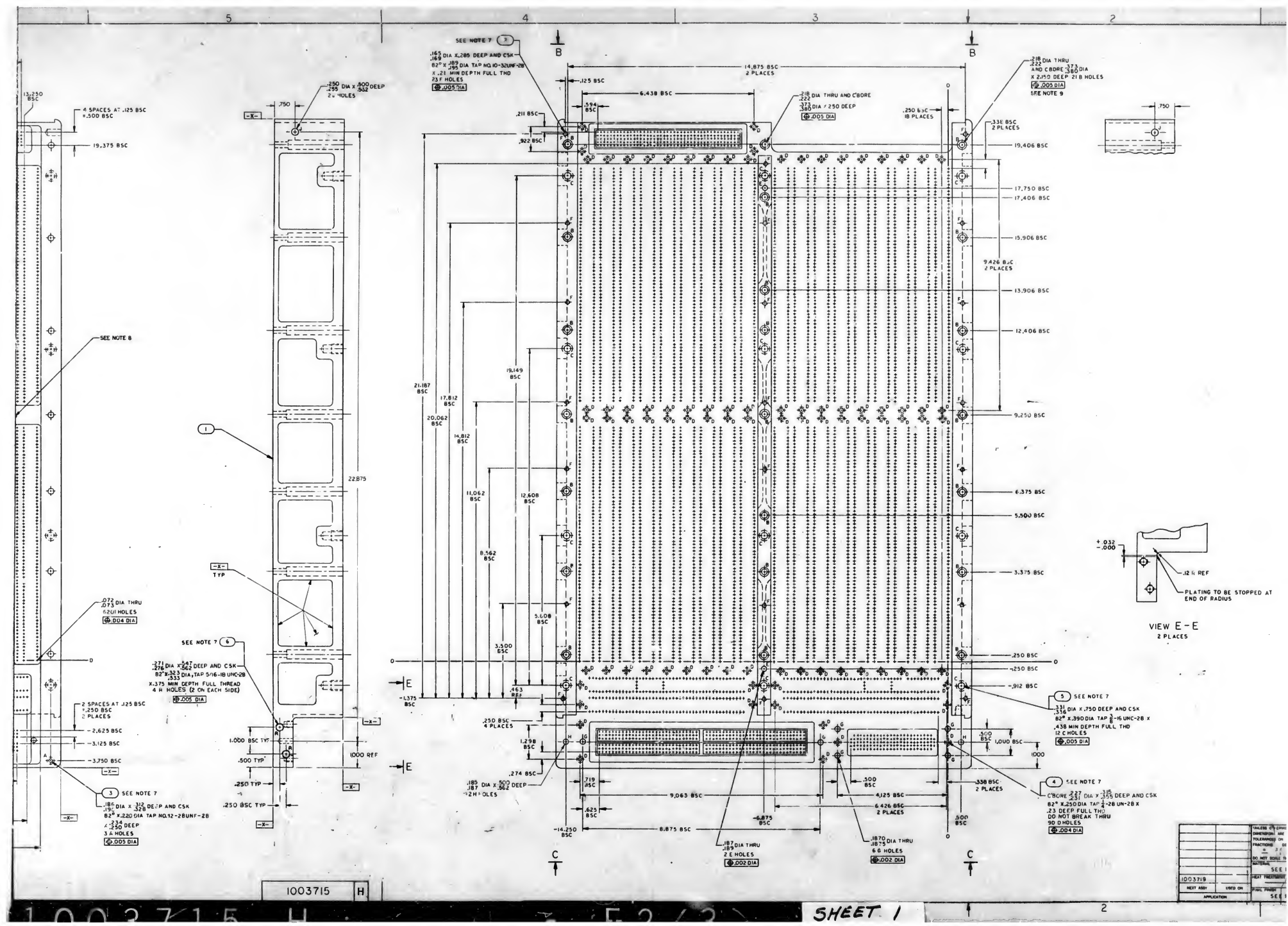
## NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY ASME Y14-27

- [illegible]









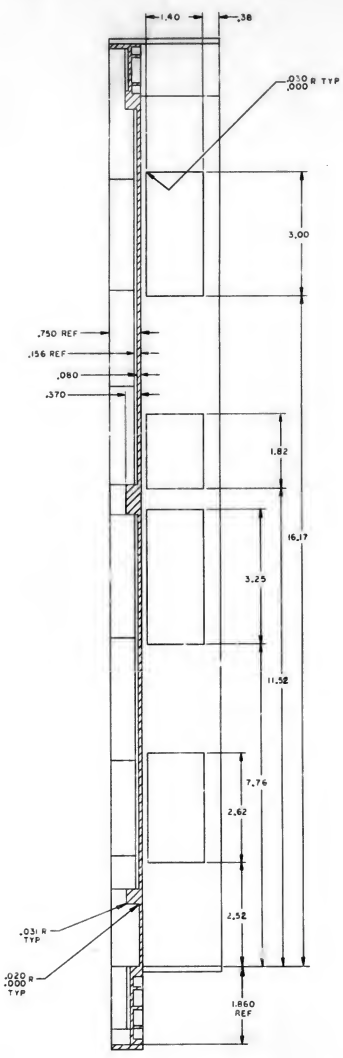


D

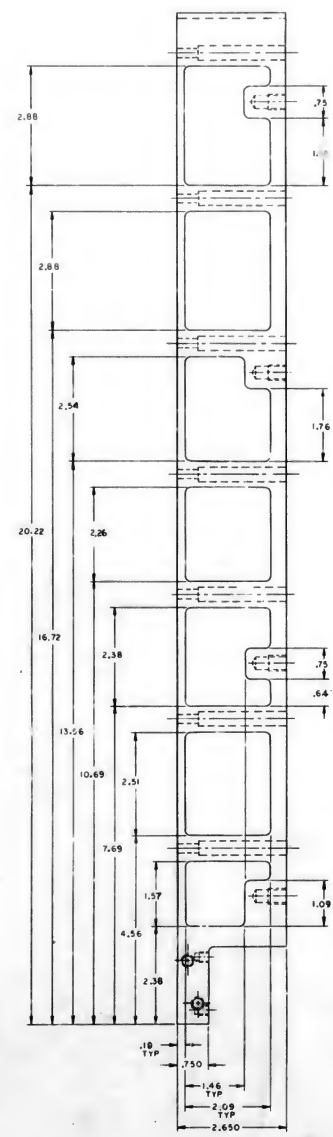
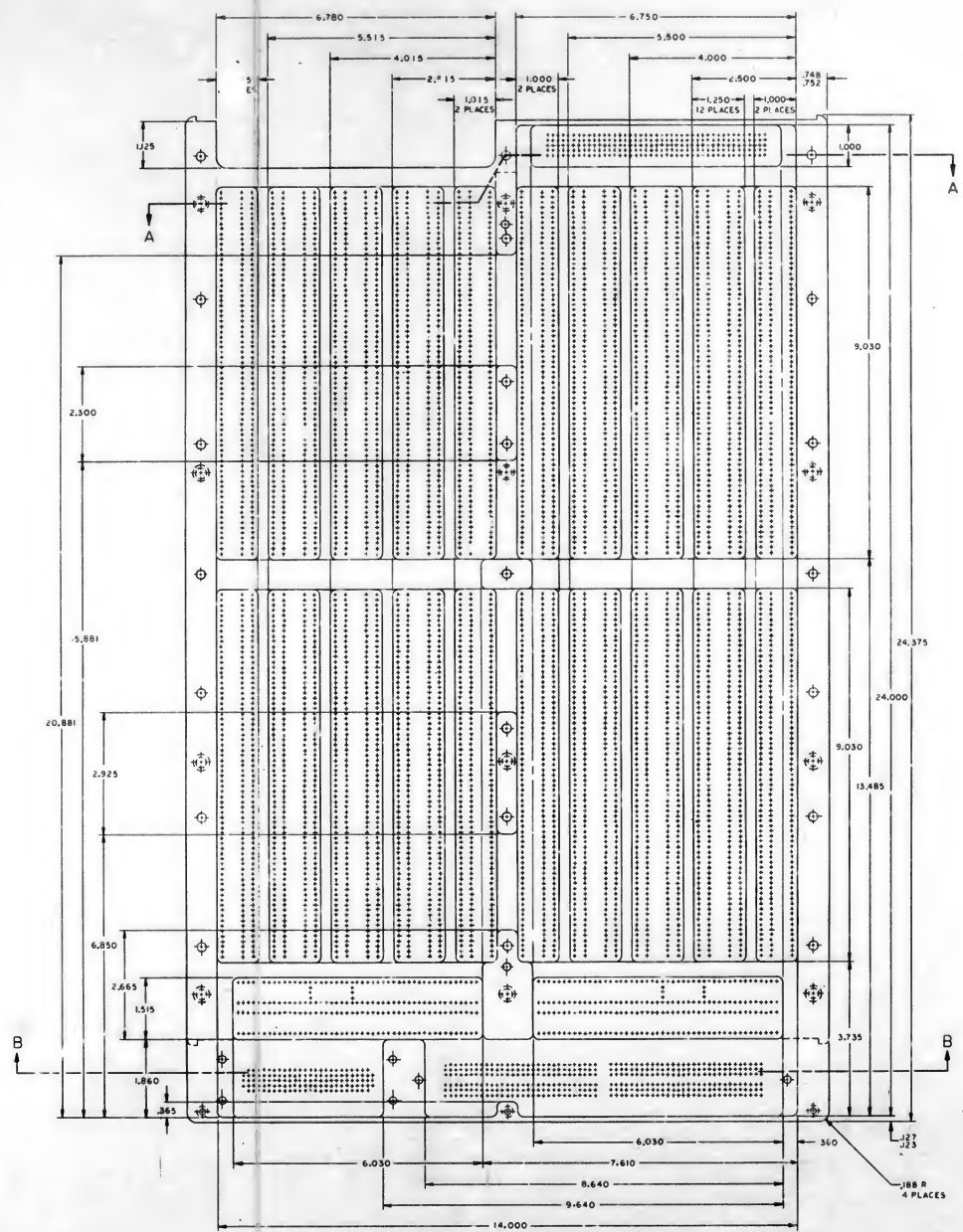
C

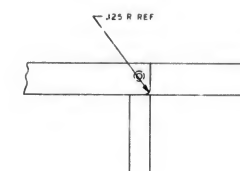
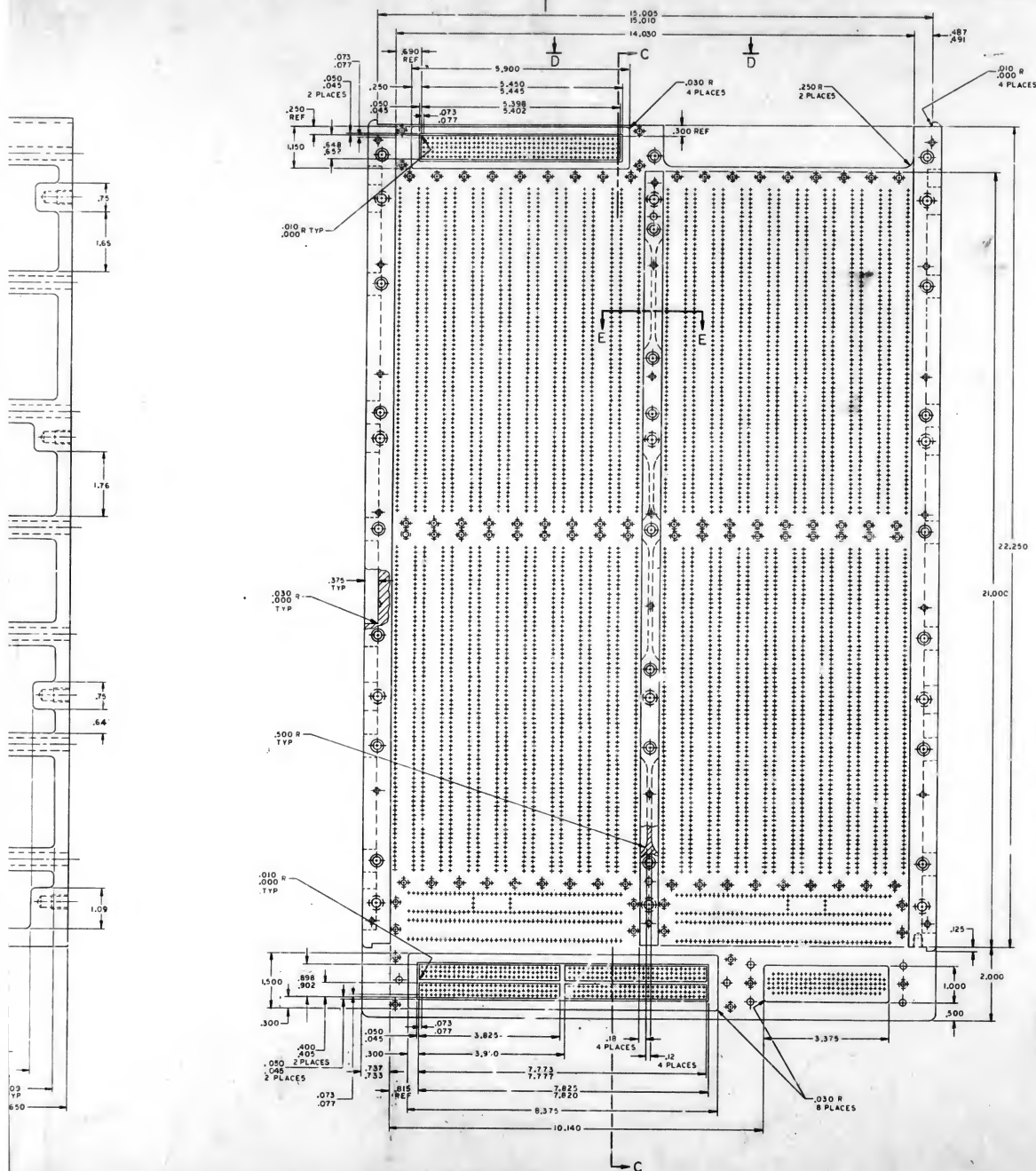
B

A

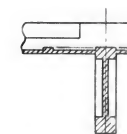


SECTION C-C

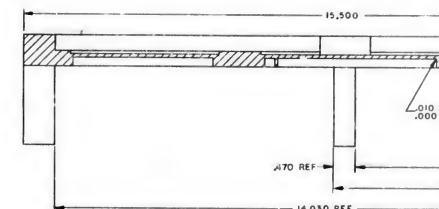




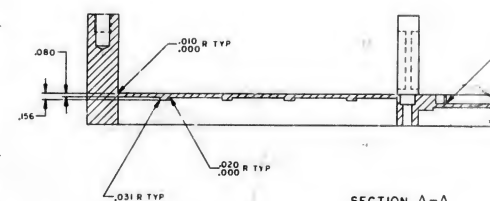
VIEW D-D



SECTION



SECTION B-B

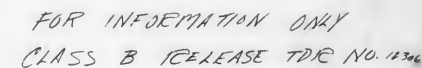


SECTION A-A

		UNLESS OTHERWISE SPECIFIED
		TOLERANCES UNLESS OTHERWISE SPECIFIED
		FRACTIONS
		DIMENSIONS
		DO NOT SCALE DRAWING
		MATERIALS
		WELDING
		HEAT TREATING
		FINISHES
LEFT HAND SIDE	USED ON	FINAL POSITION
APPLICATION		



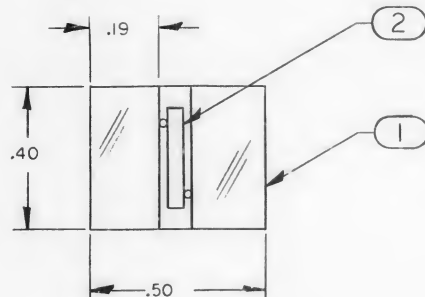
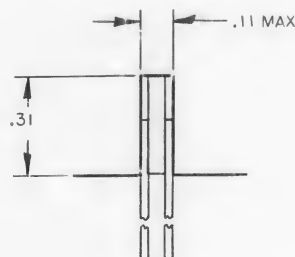




		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON FRACTIONS DECIMALS ANGLES
		$\frac{\quad}{\quad}$ .005 $^{\circ}$
		DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE 2
		HEAT TREATMENT
NEXT ASSY	USED ON	
APPLICATION		
	FINAL FINISH	SEE NOTE 6

1	104721	GASKET, ROPE COVER
2	103716 - 2	COVER
3	103716 - 1	PLATE, SIDE
QTY REQD	PRY. OF IDENTIFYING NO.	REMARKS OR DESCRIPTION
BY T		LIST OF MATERIALS
INSTRUMENTATION LAB		MANNED SPACECRAFT CENTER
APPROVED: <i>[Signature]</i> CHECKED: <i>[Signature]</i> APPROVAL: <i>[Signature]</i>		HOUSTON, TEXAS
		COVER, ASSY
		OUTSIDE ROPES
		ACG COMPUTER
SCALE	COOK DESIG. NO.	SIZE
		MARKS CHANGING NO.
MET. APPROVAL: <i>[Signature]</i>	SCALE FULL	E 1003716
		INSET 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FURNISHED, FURNISHES, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.



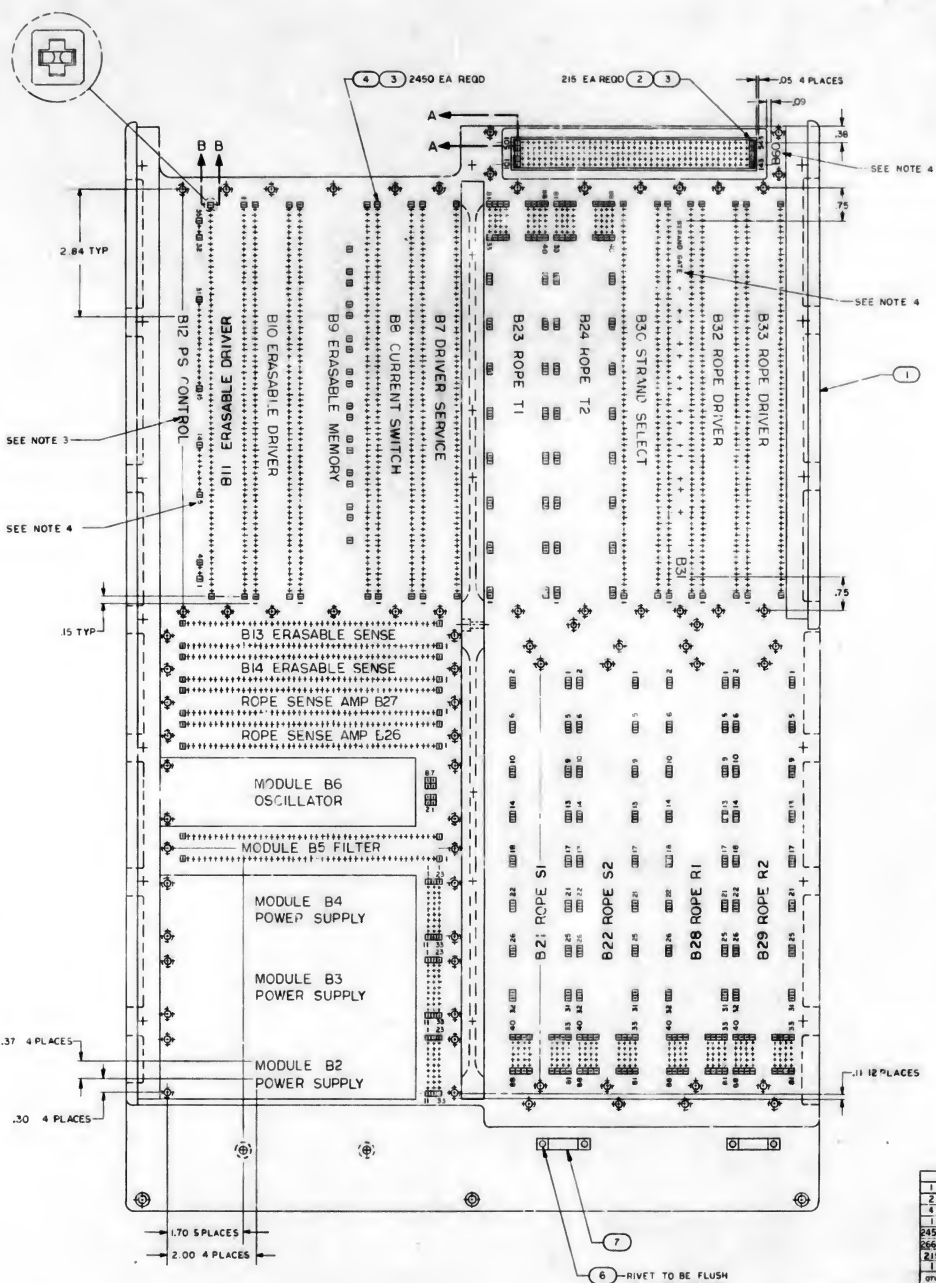
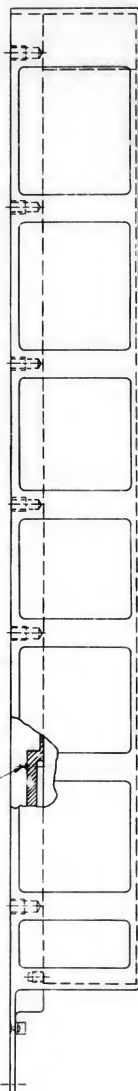
# NOTES

1. FIND NO. 1 MATL: FILM .C06/008 THK PER L-F-340, TYPE 1B, CLASS 2, STYLE 1A
2. BOND FIND NO. 1 TO FIND NO. 2 PER ND1002187, CENTRALIZE AS SHOWN
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
4. IDENTIFY PER ND1002019

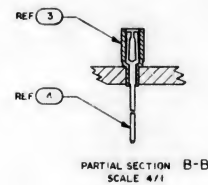
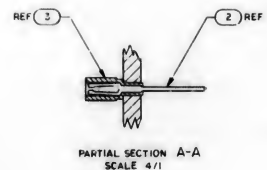
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ — $\pm$ .02 $\pm$ — DO NOT SCALE THIS DRAWING
		MATERIAL
1003704		
NEXT ASSY	USED ON	
APPLICATION		

1	1006712-3		RESISTOR, TEMP SENSITIVE	2
AR	1003717-1	NOTE 1	INSULATOR	1
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	<i>E. W. Johnson</i>	DATE	RESISTOR ASSEMBLY	
CHECKED	<i>R. P. Johnson</i>	DATE		
APPROVED	<i>R. P. Johnson</i>	DATE		
APPROVED	<i>R. P. Johnson</i>	DATE		
APPROVED MIT	<i>R. P. Johnson</i>	DATE	CODE IDENT NO.	SIZE
APPROVED MSC	<i>R. P. Johnson</i>	DATE	C	1003717
SCALE 4-1		DATE	DRAWING NO.	
			SHEET 1 OF 1	





REV	BY	DATE	DESCRIPTION
A	REVISED PER TORR 13131	10/20/72	CLASS A PER TORR 13131
B	REVISED PER TORR 14731	11/15/72	CLASS A PER TORR 14731
C	REVISED PER TORR 14731	11/15/72	CLASS A PER TORR 14731
D	REVISED PER TORR 14731	11/15/72	CLASS A PER TORR 14731



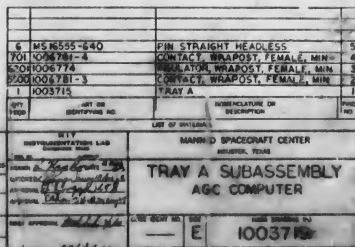
NOTES  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70320  
2. INSTALL FINE NO. 23 AND 4 PER NO. 1002122 TYPE II  
3. MARK .207/.167 HIGH WHITE CHARACTERS PER NO. 1002122 TYPE II CLASS PER NO. 1002019 USING MARKING INK DRAWING 1006271-1  
4. MARK .100/.060 HIGH WHITE CHARACTERS PER NO. 1002122 TYPE II CLASS I PER NO. 1002019 USING MARKING INK DRAWING 1006271-1  
5. IDENTIFY PER NO. 1002019 IN AREA SHOWN

QTY	IDENTIFYING NO.	DESCRIPTION	UNIT
1	MS35333-69	WASHER, LOCK INT. 100TH	8
2	1004735	BRACKET, CABLE SUPPORT	7
4	MS20426AD2-8	NUT, CSA #2	6
1	1004518-2	TERMINAL	3
2450	1006781-3	CONTACT, WRAPOST, FEMALE, MIN.	4
3265	1006774	INSULATOR, WRAPOST, FEMALE, MIN.	3
215	1006781-4	CONTACT, WRAPOST, FEMALE, MIN.	2
1	1003714	TRAY B	1

QTY	IDENTIFYING NO.	DESCRIPTION	UNIT
1	1003701	TRAY B SUBASSEMBLY	1

QTY	IDENTIFYING NO.	DESCRIPTION	UNIT
1	1003718	TRAY B SUBASSEMBLY	1

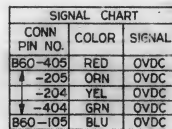
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON DIMENSIONS DO NOT FLARE THE DIMENSIONS MATERIALS FINISH TREATMENT NEAT ASSEMBLY APPLICATION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON DIMENSIONS DO NOT FLARE THE DIMENSIONS MATERIALS FINISH TREATMENT NEAT ASSEMBLY APPLICATION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON DIMENSIONS DO NOT FLARE THE DIMENSIONS MATERIALS FINISH TREATMENT NEAT ASSEMBLY APPLICATION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON DIMENSIONS DO NOT FLARE THE DIMENSIONS MATERIALS FINISH TREATMENT NEAT ASSEMBLY APPLICATION
--	--	--	--



- NOTE: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-70327  
2. MARK 107/167 HIGH WHITE CHARACTERS PER NID002122 TYPE II CLASS I PER NID002109 USING MARKING INK 106G27-I-1  
3. MARK 170/130 HIGH WHITE CHARACTERS PER NID002122 TYPE II CLASS I PER NID002109 USING MARKING INK 106G27-I-1  
4. MARK 100/160 HIGH WHITE CHARACTERS PER NID002122 TYPE II CLASS I PER NID002109 USING MARKING INK 106G27-I-1  
5. IDENTIFY WITH NASA DRAWING NUMBER PER NID002109 WHERE SHOWN  
6. MARK WHITE USING MARKING INK 106G27-I-1



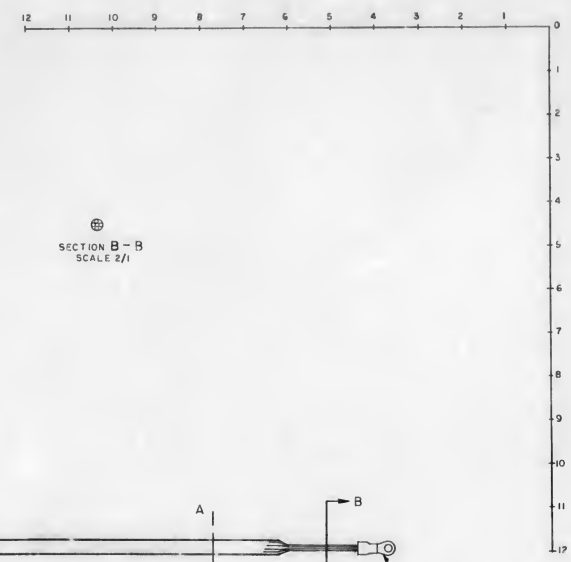
A vertical number line with tick marks labeled from 0 to 11. The numbers are arranged vertically, with 0 at the bottom and 11 at the top. Each number is centered next to its corresponding tick mark.



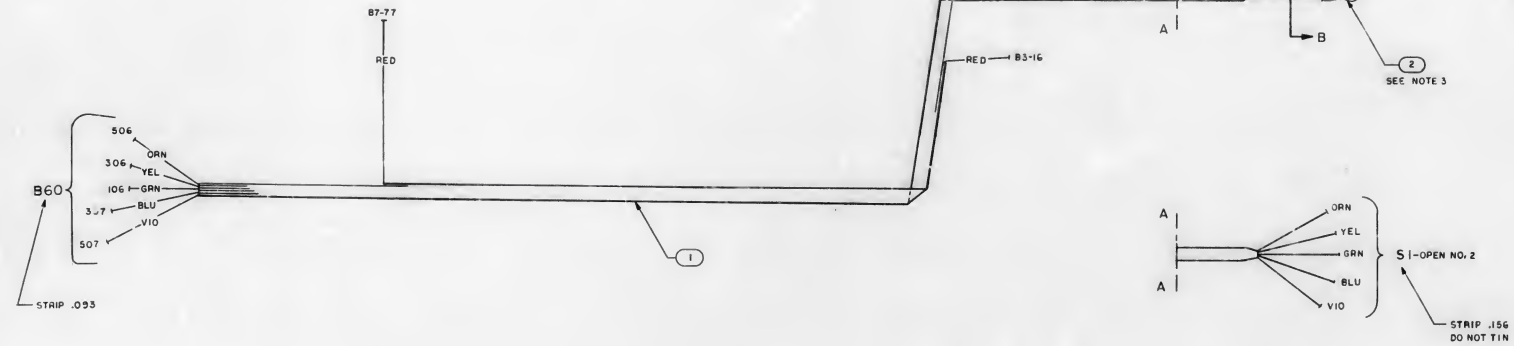
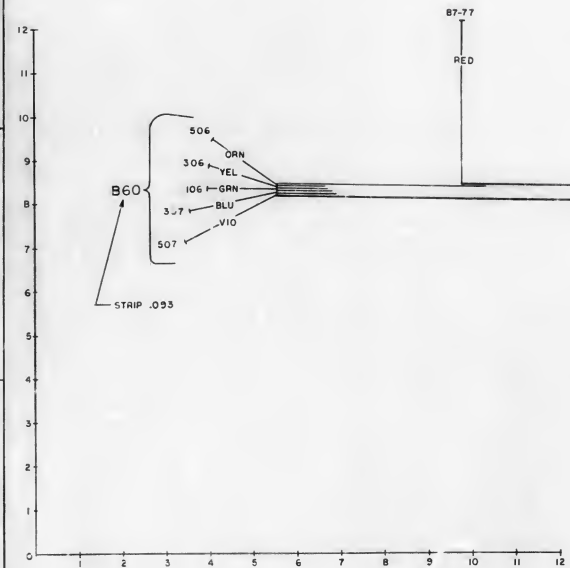
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. FOR SYMBOLS FABRICATION AND REQUIRED TESTS SEE ND1002032
  3. AR DENOTES AS REQUIRED
  4. IDENTIFY PER ND1002019

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS    DECIMALS    ANGLES $\pm .XXX + .000$ $\pm .000$ DO NOT SCALE THIS DRAWING MATERIAL		CITY INSTRUMENTATION LAB CHANDLER, ARIZ. DOWNS, INC. CONTACT:		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		DRAWN <i>A. B. Wilson</i> DATE <i>6/28/66</i> CHECKED <i>P. J. Higgins</i> DATE <i>6/29</i> APPROVA. <i>Edna C. H. Wilson</i>		FLAT CABLE "A" TRAY B	
1003701		HEAT TREATMENT:		NASA APPROVAL <i>Michael V. H.</i>	
NEXT ASSY    USED (X)		FINAL FINISH		CODE IDENT. NO.    SIZE	NASA DRAWING NO. 1003720
APPLICATION		MIT APPROVAL <i>W. H. H. H. H.</i>		SCALE 1/1    D	SHEET 1 OF





SECTION B-B  
 SCALE 2/1



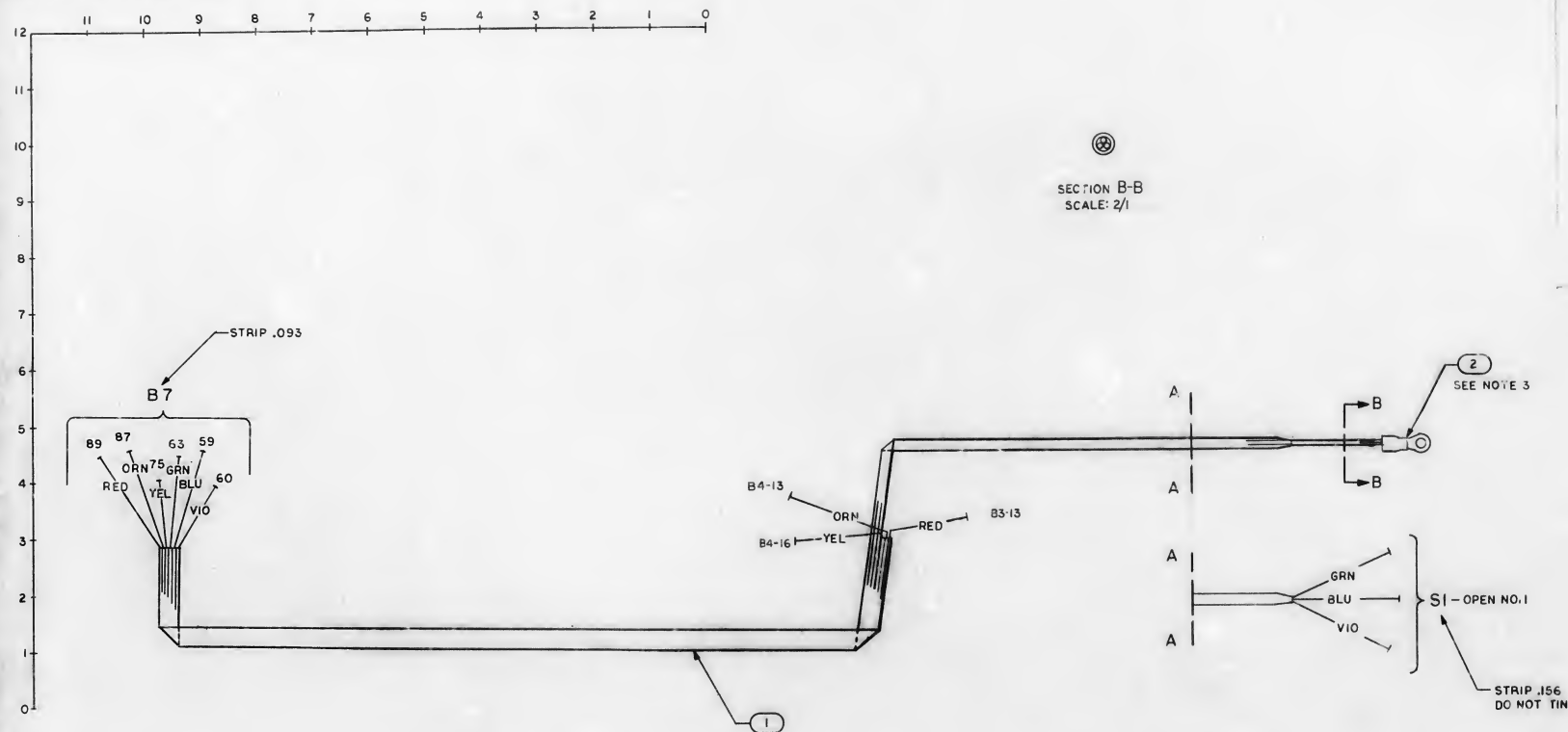
SIGNAL CHART		
CCNN PIN NO.	COLOR	SIGNAL
B7-77	RED	OVDC
B60-506	ORN	+3B
506	YEL	+3B
106	GRN	+3B
307	BLU	+3B
B60-507	VIO	+3B

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
 PRESCRIBED BY MIL-D-70327
  2. FOR SYMBOLS FABRICATION AND REQUIRED TESTS SEE NO 1002032
  3. INSTALL WIND 2 PER NO 100206
  4. AR DENOTES AS REQUIRED
  5. IDENTIFY PER NO 1002019

M525056-6		TERMINAL LUG	
1006292-1		WIRE/ELECTRICAL (FLAT CABLE)	
QTY	PART OR IDENTIFYING NO	QUANTITY OR DESCRIPTION	PROD NO
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
FLAT CABLE "B" (TRAY B)			
CODE IDENT NO	SIZE	MILS DRAWING NO	
E	1003721		
SCALE 1/1		SHEET 1 OF 1	

NOTICE -- WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A GOVERNMENT CONTRACT, THE USER ASSUMES ALL RESPONSIBILITY FOR THE USE OF SUCH INFORMATION AND THE FACT THAT THE GOVERNMENT MAY HAVE FURNISHED, FORWARDED, OR RELEASED SUCH INFORMATION DOES NOT CONSTITUTE AN ENDORSEMENT, NOR IS IT TO BE DEEMED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER ENDORSING THE USER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY OPINION OR PERFORMANCE OF THE GOVERNMENT. THE USER SHALL BE RESPONSIBLE FOR ANYTHING THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TERR 12306			
SYM	DESCRIPTION	DATE	APPROVA
A	REVISED AND UPGRADED TO CLASS A PER TDRR 12548	18 SEP 68 JEP	R. JEP



SIGNAL CHART		
CONN PIN NO	COLOR	SIGNAL
B7 - 89	RED	+3A
— 87	ORN	+3A
— 75	YEL	OVDC
— 63	GRN	BPLUS B
↓ — 59	BLU	BPLUS B
B* — 60	VIO	BPLUS B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR SYMBOLS FABRICATION AND REQUIRED TEST SEE ND 1002032
3. INSTALL FIND 2 PER ND 1002206
4. AR DENOTES AS REQUIRED
5. IDENTIFY PER ND 1002019

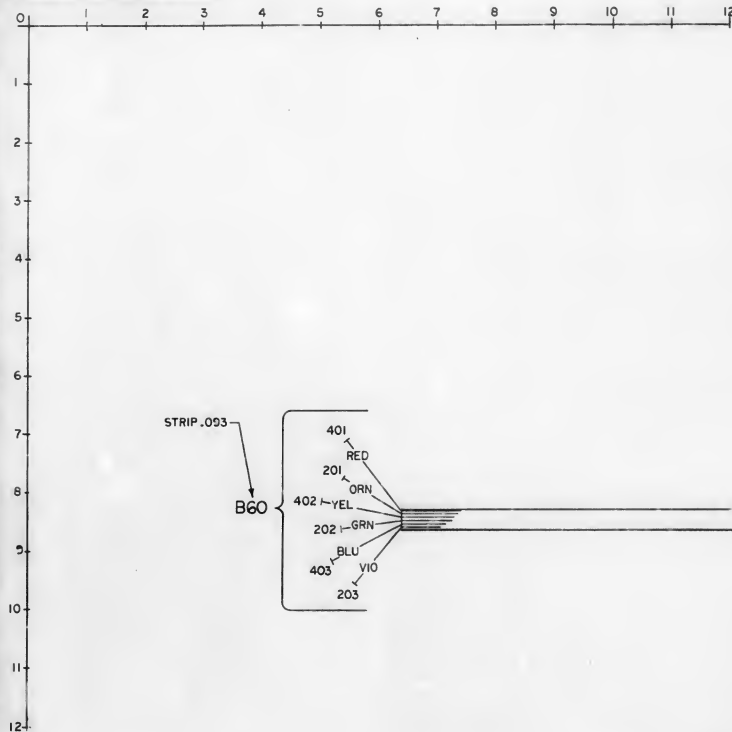
I	MS25036-1	TERMINAL, LUG
A R	006292-1	WIRE, ELECTRICAL, (FLAT CABLE)
QTY REQD	PART OR IDENTIF/ING NO.	NOMENCLATURE OR DESCRIPTION
		LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES DRAWN <u>1003701</u> CHECKED <u>1003701</u> DO NOT SCALE THIS DRAWING MATERIAL _____	HEAT TREATMENT _____  FINAL FINISH _____	SECTION "INSTRUMENTATION LAB CHANGING STAGE DATE _____ DRAWN <u>1003701</u> DATE <u>10/09/69</u> APPROVED <u>[Signature]</u> EEP APPROVAL <u>1003701</u> 20 Aug 69		MANNED SPACECRAFT CENTER HOUSTON, TEXAS  FLAT CABLE "C" (TRAY B)	
		1003701 NEXT ASSY USED ON _____ APPLICATION _____	NASA APPROVAL <u>[Signature]</u> EAT APPROVAL <u>[Signature]</u> SCALE <u>1</u> WT _____	CODE IDENT NO. _____ SIZE <u>D</u> NASA DRAWING NO. <u>1003722</u>	(SEE E) OF _____



NOTE - THIS DRAWING IS A REVISION OF DRAWING 1003723. IT IS NOT TO BE USED FOR THE PURPOSES OF FABRICATING OR TESTING. IT IS TO BE USED FOR THE PURPOSES OF IDENTIFICATION ONLY. THE USER SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF THE PARTS AND MATERIALS. THE USER SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF THE PARTS AND MATERIALS. THE USER SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF THE PARTS AND MATERIALS.

REV	DESCRIPTION	DATE	APPROVAL
1	REVISED AND UPGRADED TO CLASS A PER TDDR 12585	12/85	HT



SIGNAL C		
CONN PIN NO	COLOR	SIGNAL
B60-401	RED	+28AUF
-201	ORN	+28AUF
-402	YEL	OVDCCUF
-202	GRN	OVDCCUF
403	BLU	+28BUDF
B60-203	VIO	+28BUDF

# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR SYMBOLS FABRICATION & REQUIRED TESTS SEE NO 1002032
3. AR DENOTES AS REQUIRED
4. IDENTIFY PER ND1002019

AR 1006292-1		WIRE, ELECTRICAL, (FLAT CABLE)		1
QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		FIND NO.
LIST OF MATERIALS				
INSTRUMENTATION LAB CANDORVILLE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN BY: <i>Q. B. B.</i> DATE: <i>12/85</i>		FLAT CABLE "D" (TRAY B)		
CHECKED BY: <i>Q. B. B.</i>		NASA APPROVAL: <i>Q. B. B.</i>		
APPROVAL: <i>Q. B. B.</i>		CODE IDENT NO. <i>D</i>		
MIT APPROVAL: <i>Q. B. B.</i>		SCALE: 1/1 WT: <i>1.1</i> SHEET: 1 OF 1		



NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO RESPONSIBILITY FOR ANY DELAY OR MISINTERPRETATION, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY MANNER SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS AN IMPLICIT LICENSE OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE IN ANY WAY BE RELATED THEREOF.

1003725

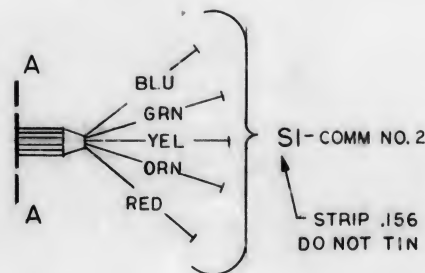
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UPGRADED TO CLASS A PER TORR 12576	11 SEP 64	AM

SIGNAL CHART

CONN PIN NO.	COLOR	SIGNAL
B3-3	RED	
B3-1	ORN	
B4-3	YEL	
B4-13	GRN	
B4-1	BLU	

SECTION B-B  
SCALE 2/1



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR SYMBOLS FABRICATION AND REQUIRED TESTS SEE ND 1002032
3. INSTALL FIND 2. PER ND 1002206
4. AR DENOTES AS REQUIRED
5. IDENTIFY PER ND 1002019

1	ME 35036-6	TERMINAL, LUG	2
AR	1006292-1	WIRE ELECTRICAL (FLAT CABLE)	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>A. Di Len</i> DATE 21 AUG 64		FLAT CABLE "F" (TRAY B)	
CHECKED <i>E. J. Duggan</i> LTB		CODE IDENT NO. SIZE	
APPROVAL <i>E. J. Duggan</i> LTB		NASA DRAWING NO.	
APPROVAL <i>E. J. Duggan</i> LTB		1003725	
NASA APPROVAL <i>W. H. H. 9/1/64</i>		SCALE 1/1	
MIT APPROVAL <i>W. H. H. 9/1/64</i>		WT	
SHEET 1 OF 1		1	



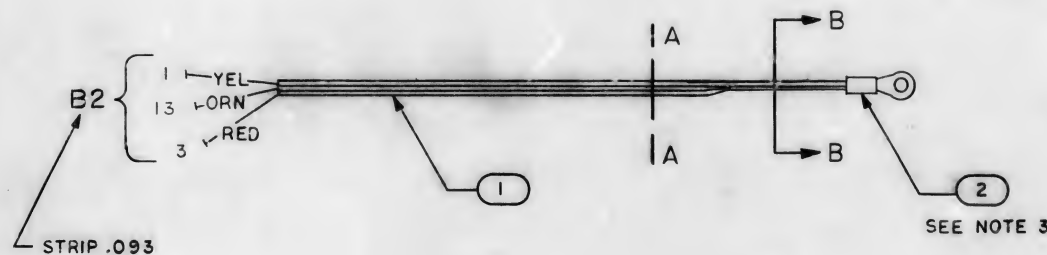
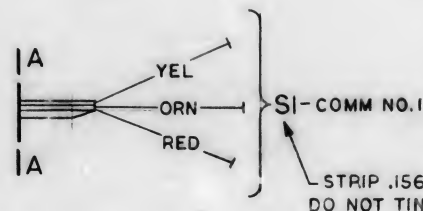
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

1003726

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UPGRADED TO CLASS A PER TDRR 12578	11 SEP 68	EL JN

SIGNAL CHART		
CONN PIN NO.	COLOR	SIGNAL
B2-3	RED	B PLUS A
B2-13	ORN	B PLUS A
B2-1	YEL	B PLUS A

SECTION B-B  
SCALE 2/1



## NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR SYMBOLS, FABRICATION AND REQUIRED TEST SEE ND 1002032
3. INSTALL FIND 2 PER ND 1002206
4. AR DENOTES AS REQUIRED
5. IDENTIFY PER ND 1002019

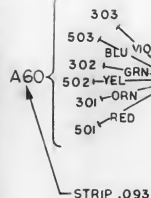
MASTER

1	MS25036 - 1	TERMINAL, LUG	2
AR	1006292 - 1	WIRE, ELECTRICAL (FLAT CABLE)	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

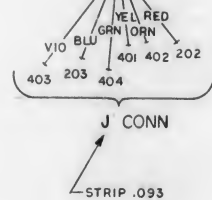
## LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DATE 2/2/68	CONTRACT	FLAT CABLE "G" (TRAY B)	
DRAWN A. B. Lee	DATE 2/2/68	NASA DRAWING NO. 1003726	
CHECKED	APPROVAL E. J. Duggan	CODE IDENT NO. C	
APPROVAL E. J. Duggan	DATE 2/2/68	SCALE 1/1	
NASA APPROVAL	DATE 2/2/68	SHEET 1 OF 1	
MIT APPROVAL	DATE 2/2/68		

NOTES - WHEN REPRESENTING DIMENSIONS, SPECIFICATIONS, OR OTHER DATA  
 1. THE FIRST DIMENSION SHOWN SHALL BE THE DIMENSION TO THE CENTER OF THE  
 SECOND DIMENSION UNLESS OTHERWISE SPECIFIED. THE DIMENSION TO THE CENTER OF THE  
 SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 2. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 3. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 4. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 5. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 6. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 7. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 8. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 9. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 10. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 11. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.  
 12. THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION SHALL BE THE DIMENSION TO THE CENTER OF THE SECOND DIMENSION.



SIGNAL CHART		
CONN PIN NO.	COLOR	SIGNAL
A60-501	REL	+28 A
↑ -301	ORN	+28 A
-502	YEL	O VDC
-302	GRN	O VDC
↓ -503	BLU	-28 B
A60-303	VIO	-28 B



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. FOR SYMBOLS, FABRICATION AND REQUIRED TESTS SEE ND 1002032
  3. AR DENOTES AS REQUIRED
  4. IDENTIFY PER ND 1002019

AR 1006292-1		WIRE, ELECTRICAL (FLAT CABLE) I	
CTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO.
LIST OF MATERIALS			
INSTRUMENTATION LAB COLUMBIA, MISS DRAWN <i>G. D. Long</i> DATE <i>CLAS 51</i> CHECKED <i>ST. D. Long</i> 2/8/62 APPROVAL <i>ST. D. Long</i> MATERIAL		MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>FLAT CABLE "A"</b> <b>(TRAY A)</b>	
1002703 NEXT ASSY APPLICATION		NASA APPROVAL: <i>Paul T. L. 1/62</i> MIT APPROVAL: <i>D. H. 1/62</i> CODE IDENT NO. <b>D</b> SIZE <b>D</b> SCALE 1/1 WT SHEET 1 OF 1	

1003727

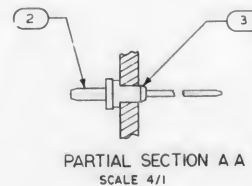
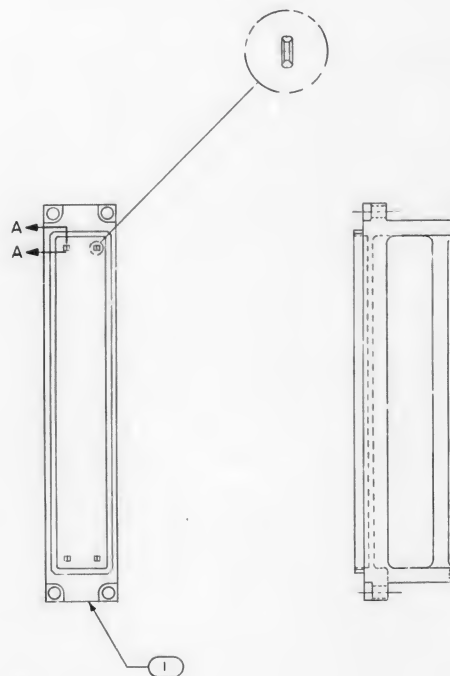
12306



• *Chlorophyll a* (Chl a) and *Chlorophyll b* (Chl b) were determined using a spectrophotometer (Shimadzu UV-1601) at 663 nm and 646 nm, respectively. The concentrations of Chl a and Chl b were calculated using the following equations:



NOTICE - WHEN GOVERNMENT SHARING, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE-RELATED BUSINESS, PLEASE INDICATE BY CHECKING THE UNITED STATES GOVERNMENT THEREBY INCURRED NO RESPONSIBILITY AND ANY OBLIGATION, AND THE FACT THAT THE GOVERNMENT MAY HAVE FURNISHED, FURNISHED TO, OR MAY FURNISH TO THE DATA, INFORMATION, OR OTHER MATERIAL DOES NOT IMPLY OR RELATE BY LOCATION OR OTHERWISE AS TO ANY BARRIER, LICENSING OR OTHER RIGHTS OR PERMISSION TO COMBINATION, OR CONVEY, OR ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY



FOR INFORMATION ONLY  
CLASS B RELEASE TDR NO. 12306

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. INSTALL FIND NO.2 AND FIND NO.3 PER ND 1002136

215	1006775	INSULATOR WRA'OST MALE MINIA	3
215	1006782-6	CONTACT, WRAPOST-MALE, MINIATURE	2
1	1004719	CONNECTOR, 215 CONTACT, AGC COMP	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINI NO

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		<div style="text-align: center;">M I T</div> <div style="text-align: center;">INSTRUMENTATION LAB</div> <div style="text-align: center;">CHAMBERLAIN STARR</div> <div style="text-align: center;">CONTRACT</div>		<div style="text-align: center;">MANNED SPACECRAFT CENTER</div> <div style="text-align: center;">HOUSTON, TEXAS</div>	
		DO NOT SCALE THIS DRAWING		DRAWN BY <i>J. A. Galt</i> DATE <i>6/2/58</i> CHECKED <i>W. J. Galt</i> DATE <i>6/2/58</i> APPROVAL <i>W. J. Galt</i> DATE <i>6/2/58</i> APPROVAL <i>W. J. Galt</i> DATE <i>6/2/58</i>		<div style="text-align: center; font-size: 2em; font-weight: bold;">CONNECTOR ASSEMBLY</div> <div style="text-align: center; font-size: 1.5em; font-weight: bold;">215 CONTACT</div> <div style="text-align: center; font-size: 1.5em; font-weight: bold;">AGC COMPUTER</div>	
		MATERIAL		NASA APPROVAL <i>W. J. Galt</i> DATE <i>6/2/58</i> MIT APPROVAL <i>W. J. Galt</i> DATE <i>6/2/58</i>			
		HEAT TREATMENT		CODE 1047 NO.		SIZE	
		NEXT ASSY USED C/U		D		NASA DRAWING NO. <div style="font-size: 2em; font-weight: bold;">1003729</div>	
APPLICATION		FINAL FINISH		SCALE 1/1		SHEET 1 OF	

1

1

1

1

31	D
----	---

12306

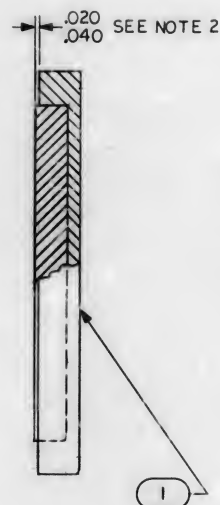
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MITY INSTRUMENTATION LAB CHANGING PASS	HANNED SPACECRAFT CENTER HOUSTON, TEXAS
	FRACTIONS      DECIMALS      ANGLES = .03      = 30	DRAWN BY DATE <i>R.C. Tipton 8-26-68</i>	<b>CONNECTOR ASSEMBLY</b> <b>360 CONTACT</b> <b>AGC COMPUTER</b>
	DO NOT SCALE THIS DRAWING MATERIAL	CHECKED <i>J.E. Dwyer 1-9-71</i>	
		APPROVAL <i>P.M. Smith 2-2-69</i>	
<b>1004866</b>	HEAT TREATMENT	NASA APPROVAL <i>Paul J. Lyle</i>	BOOK IDENT NO. <b>80230</b>
<b>1005785</b>			SHEET <b>1003731</b>
NEXT ASSY USED ON	FINAL FINISH	MIT APPROVAL <i>W. F. G. 10-2-68</i>	SCALE 1 / 1 WT SHEET OF
APPLICATION			



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A GOVERNMENT-RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER. THE UNITED STATES GOVERNMENT MAY NOT BE HELD RESPONSIBLE FOR ANY INJURY OR DAMAGE IN ANY WAY SUPPLIED BY THE SAID DATA OR SPECIFICATIONS. THE UNITED STATES GOVERNMENT SHALL NOT BE RESPONSIBLE FOR IMPLICATION OR OTHERWISE AS IN ANY MANNER FOLLOWING THE DOWNS OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING TO ANY PERSON OR CORPORATION, OR ANY OTHER PERSON OR CORPORATION, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVIS. JNS 12589

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ENCAPSULATE WITH SILASTIC RUBBER PER ND 1002009

I	1004725		COVER TEST CONNECTOR AGC	I
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FINI NO
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Louis A. Rose</i> <i>Sept 24</i> CHECKED <i>L. Rose</i> <i>11/5/64</i> APPROVED APPROVED <i>L. Rose</i> <i>2/14/68</i>			COVER, POTTED TEST CONNECTOR AGC	
APPROVED MIT <i>L. Rose</i> <i>2/15/68</i> APPROVED MSC <i>R. L. Lee</i> <i>2/15/68</i>			CODE IDENT NO. C	DRAWING NO. 1003732
DATE			SCALE 1/1	SHEET OF

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
CAPACITOR VALUES ARE IN  $\mu$ f  
RESISTOR VALUES ARE IN OHMS  
TOLERANCES ON  
FRACTIONS    DECIMALS    ANGLES  
 $\pm$  —     $\pm$      $\pm$  —  
DO NOT SCALE THIS DRAWING

MATERIAL	QTY	UNIT	PRICE	AMOUNT	TAXES	TOTAL
Cement	100	bags	1.20	120.00	12.00	132.00
Sand	200	cubic yards	0.80	160.00	16.00	176.00
Gravel	150	cubic yards	0.90	135.00	13.50	148.50
Lumber	500	boards	0.30	150.00	15.00	165.00
Bricks	1000	bricks	0.15	150.00	15.00	165.00
Paint	50	gallons	0.40	20.00	2.00	22.00
Labor	100	hours	1.50	150.00	15.00	165.00
Total				635.00	65.50	700.50

SEE NOTE 2

1003700

**NEXT ASSY**

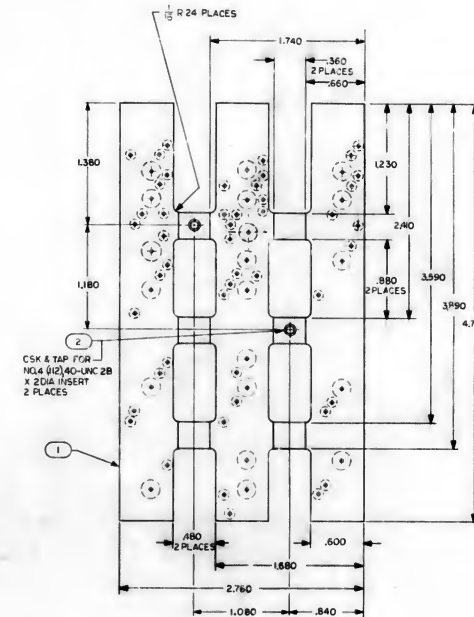
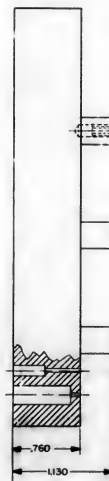
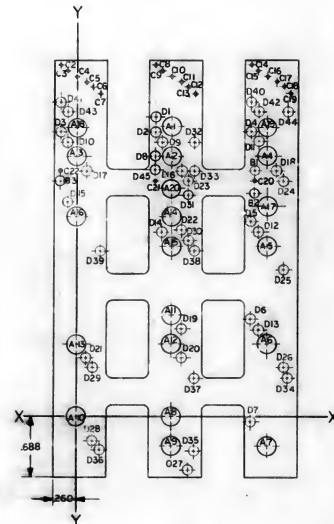
**USED ON**

## APPLICATION

NO. E IDENT	X BASIC DIM	Y BASIC DIM	Ø DIM	HOLE Ø	C Ø HOLE DEPTH
A	1.076	3.270			
A	1.076	2.938			
A	0.400	2.938			
A	2.61	2.938			
A	2.61	1.922			
A	2.61	0.820			
A	2.61	-0.332			
A	1.076	0.000			
A	1.076	-0.332			
A	0.00	0.000			
A	1.076	1.152			
A	1.076	0.820			
A	0.000	0.820			
A	1.076	2.254			
A	0.076	1.922			
A	0.00	2.254			
A	1.160	2.370			
A	0.000	3.270			
A	2.160	3.270			
B	2.020	2.776			
B	2.020	2.548			
B	-0.184	2.662			
C	-0.184	3.974			
C	-0.104	3.904			
C	0.000	3.840			
C	0.104	3.780			
C	0.184	3.712			
C	0.258	3.648			
C	0.892	3.974			
C	0.972	3.904			
C	1.076	3.840			
C	1.184	3.780			
C	1.262	3.712			
C	1.338	3.648			
C	1.976	3.974			
C	2.056	3.904			
C	2.160	3.840			
C	2.264	3.780			
C	2.344	3.712			
C	2.420	3.648			
C	2.020	2.662			
C	0.892	2.600			
C	-0.184	2.776			
D	0.892	3.380			
D	0.892	3.214			
D	-0.184	3.214			
D	1.976	3.214			
D	1.976	2.200			
D	1.976	1.094			
D	1.976	-0.060			
D	0.892	2.940			
D	0.972	3.094			
D	-0.104	3.094			
D	2.056	3.104			
D	2.056	2.084			
D	2.056	0.976			
D	0.972	2.084			
D	-0.104	2.416			
D	1.184	2.776			
D	0.104	2.776			
D	2.264	2.776			
D	1.164	0.992			
D	1.184	0.864			
D	0.104	0.864			
D	1.184	2.100			
D	1.262	2.062			
D	2.344	2.062			
D	2.344	1.136			
D	2.344	0.552			
D	1.262	-0.008			
D	0.184	-0.270			
D	0.184	0.552			
D	1.262	1.988			
D	1.262	2.582			
D	1.338	3.094			
D	1.338	2.776			
D	2.420	0.430			
D	1.338	-0.390			
D	0.258	-0.382			
D	1.338	0.430			
D	1.338	1.868			
D	0.258	1.868			
D	1.976	3.546			
D	-0.184	3.546			
D	2.056	3.436			
D	0.104	3.436			
D	2.420	3.436			
D	0.892	2.796			
D	1.076	2.298			

# NOTES:

1. INTERPRET JOINING IN ACCORDANCE WITH STANDARDS
2. PRESCRIBED BY MIL-D-70327
3. MATERIAL: PLASTIC, CLEAR ACRYLIC PER MIL-P-8184 FINISH B, ALT MIL-P-84258 FINISH B
4. TRUE POSITION AS SHOWN IN CHART
5. REMOVE ALL SHARP EDGES



INACTIVE, SUPERSEDED BY 1004596

1003097		NEXT APPR		USED OR		FINAL		APPLICATION	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON		FRACTIONS		DECIMALS	
DO NOT SCALE THIS DRAWING		SEE NOTE 2		NEXT TREATMENT		MATERIAL		MATERIAL	
1003097		NEXT APPR		USED OR		FINAL		APPLICATION	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON		FRACTIONS		DECIMALS	
DO NOT SCALE THIS DRAWING		SEE NOTE 2		NEXT TREATMENT		MATERIAL		MATERIAL	
1003097		NEXT APPR		USED OR		FINAL		APPLICATION	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON		FRACTIONS		DECIMALS	
DO NOT SCALE THIS DRAWING		SEE NOTE 2		NEXT TREATMENT		MATERIAL		MATERIAL	
1003097		NEXT APPR		USED OR		FINAL		APPLICATION	

REV	DESCRIPTION	DATE	BY
1	REVISED PER TDR 05563	1/24/67	EC
2	REVISED PER TDR 05563	1/24/67	EC
3	REVISED PER TDR 05563	1/24/67	EC
4	REVISED PER TDR 05563	1/24/67	EC
5	REVISED PER TDR 05563	1/24/67	EC
6	REVISED PER TDR 05563	1/24/67	EC
7	REVISED PER TDR 05563	1/24/67	EC
8	REVISED PER TDR 05563	1/24/67	EC
9	REVISED PER TDR 05563	1/24/67	EC
10	REVISED PER TDR 05563	1/24/67	EC

2 1003097-00480		INSERT, SCREW THREAD LOCKING		2	
1 1004156-1		BLOCK		1	
QTY		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION	
1003097		1004156-1		BLOCK	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON	
DO NOT SCALE THIS DRAWING		SEE NOTE 2		NEXT TREATMENT	
1003097		NEXT APPR		USED OR	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON	
DO NOT SCALE THIS DRAWING		SEE NOTE 2		NEXT TREATMENT	
1003097		NEXT APPR		USED OR	

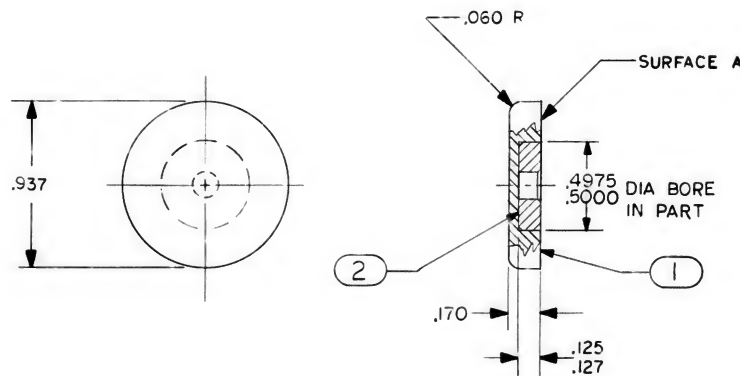
MANHATTAN SPACECRAFT CENTER  
HOUSTON, TEXAS  
BLOCK, COMPONENT  
KEYBOARD MODULE  
AGC DSKY/NAV & MAIN  
E  
1004156  
1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT HEREBY DISCLAIMS ANY RESPONSIBILITY FOR ANY OMISSIONS OR ERRORS, AND THE FACT THAT THE GOVERNMENT MAY HAVE FURNISHED, FURNISHED, OR IS MAY HAVE SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEY, OR ANY RIGHTS OR PERMISSIONS TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

1004157

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-----	-------------	------	----------



# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01298 DATE 5-22-63

## NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. MAT'L: NYLON PER MIL-P-17091
3. REMOVE SHARP EDGES
4. MASK SURFACE A
5. PAINT LIGHT GRAY PER FED-STD-595-26440

1	1004159	INSERT, BUTTON	2
1		BUTTON, ROUND	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

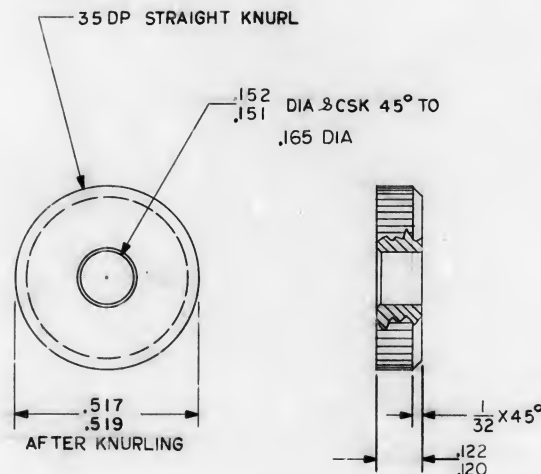
## LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm 1/64$ $\pm .005$ $\pm$ DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 2		DRAWN <u>R. R. R. R.</u> DATE <u>5-15-63</u> CHECKED <u>R. R. R. R.</u> DATE <u>5-15-63</u> APPROVAL <u>W. D. D. D.</u> DATE <u>22 MAY 63</u> APPROVAL _____	
HEAT TREATMENT		NASA APPROVAL <u>W. D. D. D.</u> DATE <u>5/11/63</u>	CODE IDENT NO. SIZE <b>C</b>
FINAL FINISH		MIT APPROVAL <u>R. R. R. R.</u> DATE <u>5/22/63</u>	NASA DRAWING NO. <b>1004157</b>
NEXT ASSY	USED ON	SCALE 2/1	WT
APPLICATION		SHEET 1	OF 1



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND ANY OBLIGATION WHATSOEVER. NOR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS TO BE CONSIDERED AN IMPLICATION OR GUARANTEE AS TO ANY CLAIMS OR RIGHTS OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSIONS TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

1		2		3		4	
REVISE		SYM		DESCRIPTION		DATE	
A		CHANGED PER TDRR		03/21		7-1-63	
B		CHANGED PER TDRR		08/76		10-1-63	



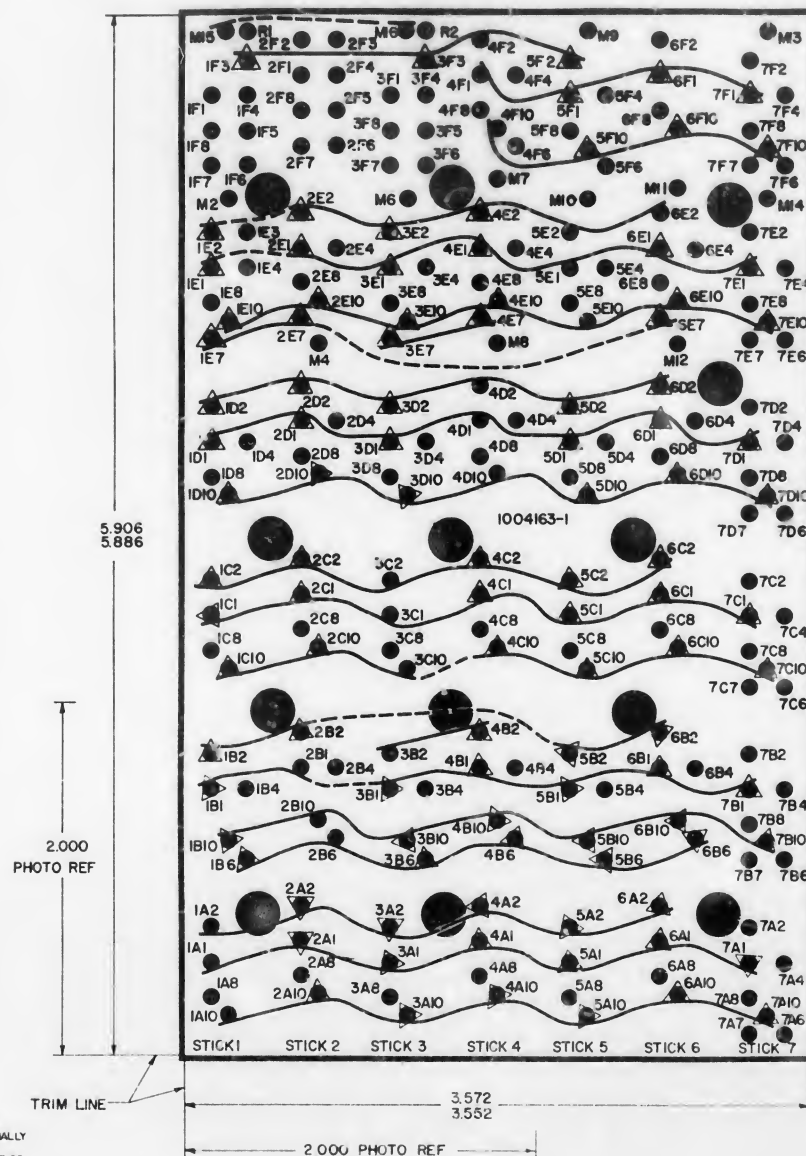
# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL 5052-H32 AL PER QQ-A-318 TEMPER H32
3. REMOVE BURRS AND SHARP EDGES
4. ANODIZE PER MIL-A-8625 TYPE II, DYED BLACK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS. NO. CONTRACT		DATE 5/16/63	
DRAWN <i>R. J. Kelly</i>		CHECKED <i>W. B. Jones</i>	
APPROVAL <i>W. B. Jones</i>		APPROVAL <i>W. B. Jones</i>	
MATERIAL		SEE NOTE 2	
HEAT TREATMENT		NASA APPROVAL <i>W. B. Jones</i>	
FINAL FINISH		MIT APPROVAL <i>W. B. Jones</i>	
APPLICATION		SCALE 4/1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
FRACTIONS	DECIMALS
±1/64	±.005
ANGLES	
±1/2°	
DO NOT SCALE THIS DRAWING	
MATERIAL	
SEE NOTE 2	
HEAT TREATMENT	
FINAL FINISH	
APPLICATION	

MASTER

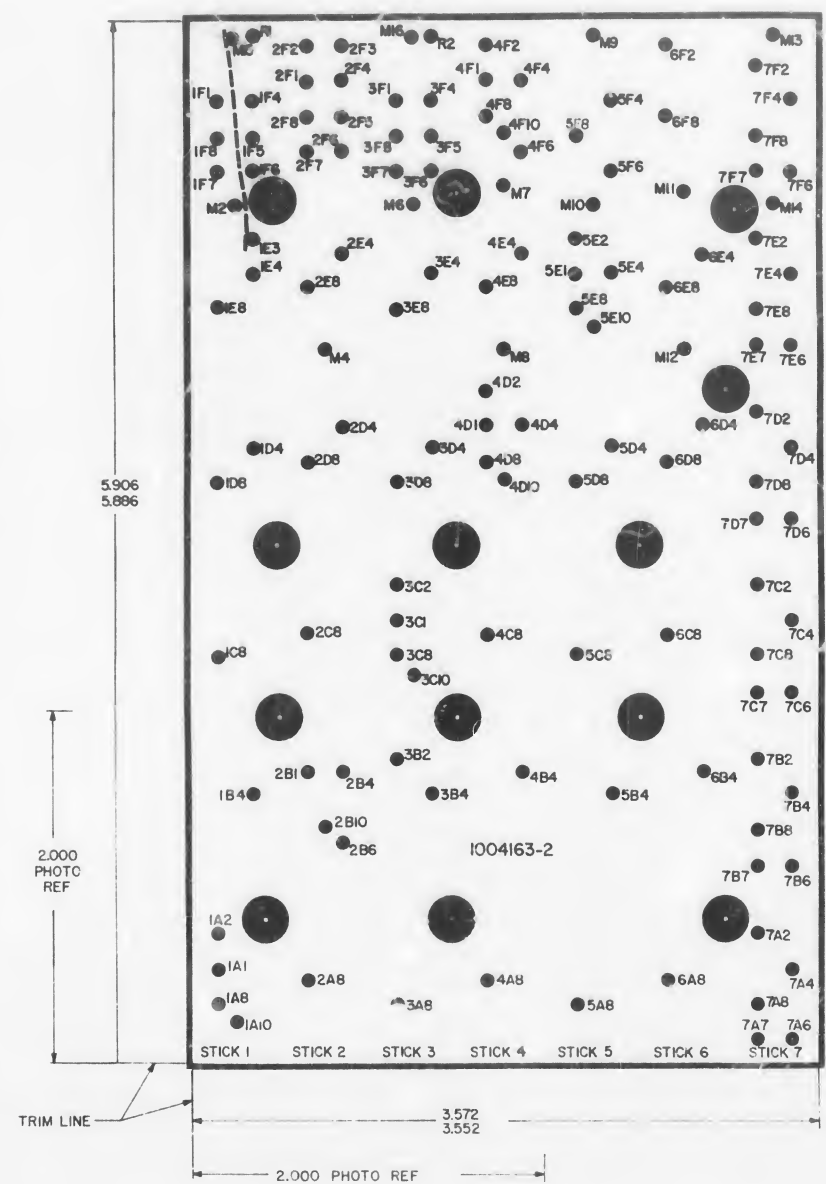


- NOTES:
1. MATERIAL .006/.008 THICK PLASTIC SHEET, SENSITIZED, DIMENSIONALLY STABLE PER L-F 340 TYPE B, CLASS 2, STYLE 14.
  2. THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT.
  3. MAKE PHOTOGRAPHIC MASTER NEGATIVE AND POSITIVE FILMS TO DIMENSIONS SHOWN.
  4. CUT TO WITHIN .010 OF TRIM LINE.
  5. (H) DENOTES .080/.084 DIA HOLES ON .-2 AND .102/.112 DIA HOLES ON .-1. ALL OTHERS .240/.260 D/A.
  6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
  7. (A) INDICATES CUT LEAD AFTER WELDING.
  8. BROKEN LINE DENOTES SLEEVING.

(H) REPLACES REV G WITH CHANGE

1003098		INSULATOR PHOTOMASTER RELAY MODULE	
AGC DSKY, NAV & MAIN		E 1004163	
4/1		1	

1	C	REPLACES REV B WITHOUT CHANGE	3/2/64	1004163-2
2	D	REVISED PER TYPING CORRECTIONS	3/2/64	1004163-2
3	E	REVISED PER TYPING CORRECTIONS	3/2/64	1004163-2
4	F	REVISED PER TYPING CORRECTIONS	3/2/64	1004163-2
5	G	REVISED PER TYPING CORRECTIONS	3/2/64	1004163-2
6	H	REVISED PER TYPING CORRECTIONS	3/2/64	1004163-2



© REPLACES REV B WITHOUT CHANGE

INSULATOR PHOTOMASTER RELAY MODULE AGC DSKY, NAVBMAIN	
E	1004163
4/1	2





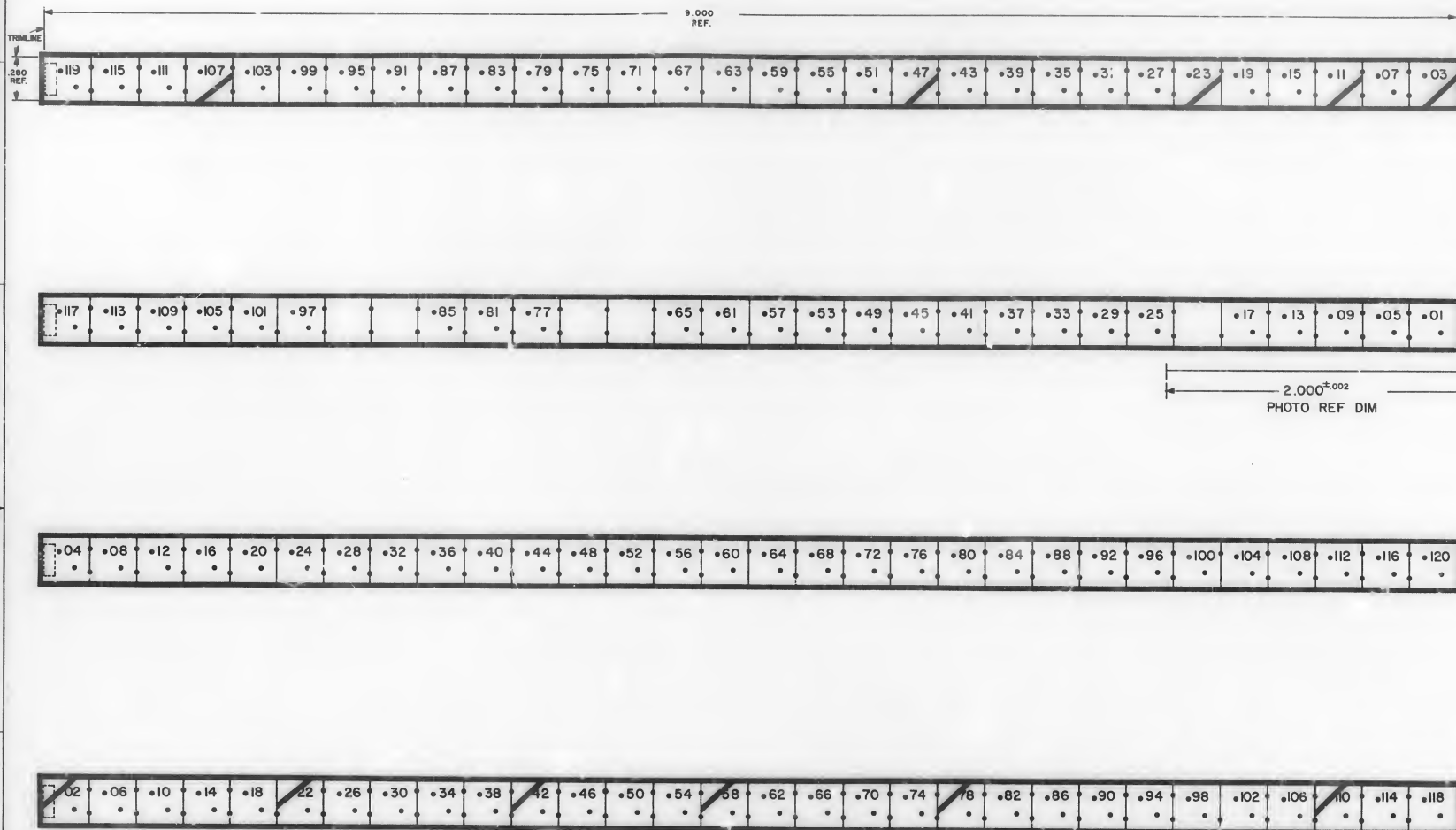


1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70357
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .01 INCH PER INCH
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
4. CUT TO WITHIN .005 OF TRIMLINE
5. MATERIAL .008/.009 THICK PLASTIC SHEETS, SEMI-RIGID, DIMENSIONALLY STABLE PER L-F-34 TYPE I, CLASS 2, STYLE IA
6. PUNCH HOLES TO .040 DIAMETER

QTY REQD		PART OR IDENTIFYING NO.		NUMBER, LOCATION (ENCL BOTTOM)	
				CITY OF ORIGIN	
M.I.T. INSTRUMENTATION LAB CAMBRIDGE, MASS.					
MANNED SPACECRAFT CENTER HOUSTON TEXAS					
IDENTIFICATION TAPE LOGIC MODULE NO. A-18					
CHECKS GENERATOR OPERATED INSTRUMENTS ARE IN MENUS SEQUENCES OF 1. 000 2. 000 3. 000 4. 000 5. 000 6. 000 7. 000 8. 000 9. 000 10. 000 11. 000 12. 000 13. 000 14. 000 15. 000 16. 000 17. 000 18. 000 19. 000 20. 000 21. 000 22. 000 23. 000 24. 000 25. 000 26. 000 27. 000 28. 000 29. 000 30. 000 31. 000 32. 000 33. 000 34. 000 35. 000 36. 000 37. 000 38. 000 39. 000 40. 000 41. 000 42. 000 43. 000 44. 000 45. 000 46. 000 47. 000 48. 000 49. 000 50. 000 51. 000 52. 000 53. 000 54. 000 55. 000 56. 000 57. 000 58. 000 59. 000 60. 000 61. 000 62. 000 63. 000 64. 000 65. 000 66. 000 67. 000 68. 000 69. 000 70. 000 71. 000 72. 000 73. 000 74. 000 75. 000 76. 000 77. 000 78. 000 79. 000 80. 000 81. 000 82. 000 83. 000 84. 000 85. 000 86. 000 87. 000 88. 000 89. 000 90. 000 91. 000 92. 000 93. 000 94. 000 95. 000 96. 000 97. 000 98. 000 99. 000 100. 000 101. 000 102. 000 103. 000 104. 000 105. 000 106. 000 107. 000 108. 000 109. 000 110. 000 111. 000 112. 000 113. 000 114. 000 115. 000 116. 000 117. 000 118. 000 119. 000 120. 000 121. 000 122. 000 123. 000 124. 000 125. 000 126. 000 127. 000 128. 000 129. 000 130. 000 131. 000 132. 000 133. 000 134. 000 135. 000 136. 000 137. 000 138. 000 139. 000 140. 000 141. 000 142. 000 143. 000 144. 000 145. 000 146. 000 147. 000 148. 000 149. 000 150. 000 151. 000 152. 000 153. 000 154. 000 155. 000 156. 000 157. 000 158. 000 159. 000 160. 000 161. 000 162. 000 163. 000 164. 000 165. 000 166. 000 167. 000 168. 000 169. 000 170. 000 171. 000 172. 000 173. 000 174. 000 175. 000 176. 000 177. 000 178. 000 179. 000 180. 000 181. 000 182. 000 183. 000 184. 000 185. 000 186. 000 187. 000 188. 000 189. 000 190. 000 191. 000 192. 000 193. 000 194. 000 195. 000 196. 000 197. 000 198. 000 199. 000 200. 000 201. 000 202. 000 203. 000 204. 000 205. 000 206. 000 207. 000 208. 000 209. 000 210. 000 211. 000 212. 000 213. 000 214. 000 215. 000 216. 000 217. 000 218. 000 219. 000 220. 000 221. 000 222. 000 223. 000 224. 000 225. 000 226. 000 227. 000 228. 000 229. 000 230. 000 231. 000 232. 000 233. 000 234. 000 235. 000 236. 000 237. 000 238. 000 239. 000 240. 000 241. 000 242. 000 243. 000 244. 000 245. 000 246. 000 247. 000 248. 000 249. 000 250. 000 251. 000 252. 000 253. 000 254. 000 255. 000 256. 000 257. 000 258. 000 259. 000 260. 000 261. 000 262. 000 263. 000 264. 000 265. 000 266. 000 267. 000 268. 000 269. 000 270. 000 271. 000 272. 000 273. 000 274. 000 275. 000 276. 000 277. 000 278. 000 279. 000 280. 000 281. 000 282. 000 283. 000 284. 000 285. 000 286. 000 287. 000 288. 000 289. 000 290. 000 291. 000 292. 000 293. 000 294. 000 295. 000 296. 000 297. 000 298. 000 299. 000 300. 000 301. 000 302. 000 303. 000 304.					

6  
5  
4  
3  
2  
1

REVISIONS  
DATE  
BY  
DESCRIPTION



± .002  
2.000  
PHOTO  
REF  
DIM

2.000 ± .002  
PHOTO REF DIM

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
  3. MAKE MASTER PATTERN FOR FIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .001 OF DIMENSION
  5. MATERIAL: .008/.008 THK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE II, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .041 DIAMETER

REFERENCE DIV.  
L WIRING DIAGRAM 1006123

CITY ROOM		PART OR IDENTIFYING NO.		REVISION DATE		LIST OF MATERIALS	
CHECKED DIMENSIONS TOLERANCES FINISHES CHECKED APPROVAL DATE				INSTRUMENTATION LWB CHECKED APPROVAL DATE			
SEE NOTE 5 HEAT TREATMENT USED ON FINAL TREATMENT				MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>IDENTIFICATION TAPE</b> <b>LOGIC MODULE NO. A17</b> NASA APPROVAL DATE NASA DRAWING NO. <b>1004173</b>			

1004173







# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
4. CUT TO WITHIN .001 OF TOLERANCE
5. MATERIAL: .002 IN THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE II, CLASS 2, STYLE 1A
6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG.  
LWIRING DIAGRAM 1008125

1	1004175-4	IDENTIFICATION TAPE	4
1	1004175-3	IDENTIFICATION TAPE	3
1	1004175-2	IDENTIFICATION TAPE	2
1	1004175-1	IDENTIFICATION TAPE	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DIMENSIONS FRACTIONS DECIMALS ANGLES HOLE DIA. TAP DIA. HOLE DIA. TAP DIA. HOLE DIA. TAP DIA.		BY INSTRUMENTATION LAB HOUSTON, TEXAS DATE CHECKED APPROVED DATE		MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>IDENTIFICATION TAPE LOGIC MODULE NO. A23</b>	
SEE NOTE 5		NASA APPROVAL DATE BY		NASA DRAWING NO. <b>1004175</b>	
NEXT REV. BY DATE		SHEET NO. 1		SHEET 1 OF 1	

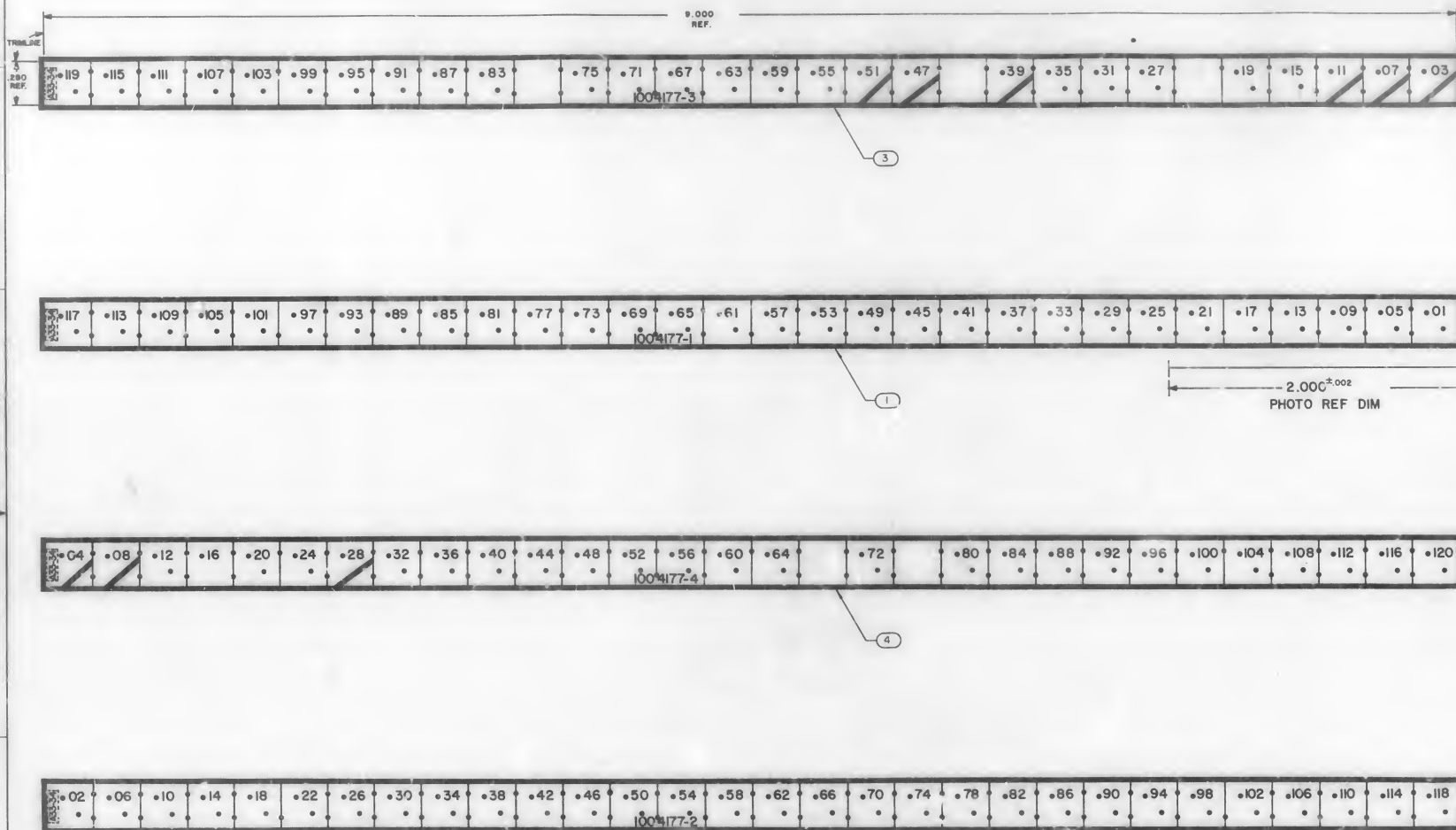


- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS DESCRIBED BY MIL-D-70357
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL ACCURACY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .001 OF TRIMLINE
  5. MATERIAL .008/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-F-54 TYPE II, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG.  
1 WIRING DIAGRAM 1006126

TITLE IDENTIFICATION TAPE		PART OR DRAWING NO.		WORKING TITLE OR DESCRIPTION		DATE	
INSTRUMENTATION LAB HOUSTON TEXAS		DATE 9/5/68		DRAWN BY J. L. B.		CHECKED BY J. L. B.	
APPROVAL J. L. B.		APPROVAL J. L. B.		APPROVAL J. L. B.		APPROVAL J. L. B.	
SEE NOTE 5		NASA APPROVAL J. L. B.		CODE SHEET NO. E		NASA DRAWING NO. 1004176	
NEXT ASSY APPLICATION		USED ON FINAL DESIGN		DATE 9/1/68		SHEET 1 OF 1	





- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70357
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .002 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .010 OF TRIMLINE
  5. MATERIAL: .006/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE II, CLASS 2, STYLE IA
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG.  
1. SIGNAL WIRING DIAGRAM 100627

1004177-4	IDENTIFICATION TAPE	4
1004177-3	IDENTIFICATION TAPE	3
1004177-2	IDENTIFICATION TAPE	2
1004177-1	IDENTIFICATION TAPE	1

1003082-15 1003081-15		SEE NOTE 5 NEXT REVISION NEXT REV.		MANNED SPACECRAFT CENTER HOUSTON TEXAS <b>IDENTIFICATION TAPE</b> <b>LOGIC MODULE NO. 433-34</b> LOGIC CENTER NO. <b>E</b> DATE <b>1004177</b>	
APPLICATION		SCALE 4/1		SHEET 1 OF 1	



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH.
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WIDTH .001 OF TRIMLINE
  5. MATERIAL: .008/.008 THICK PLASTIC SHEET (3), SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE 1A, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG.  
1. SIGNAL WIRING DIAGRAM 100528

QTY 100417C		PART 100417C		MATERIAL 100417C	
INSTRUMENTATION LAB MANNED SPACECRAFT CENTER HOUSTON, TEXAS		IDENTIFICATION TAPE LOGIC MODULE NO.		NASA DRAWING NO. 1004178	
NASA APPROVAL [Signature]		NASA APPROVAL [Signature]		DATE 4/71	

100417C

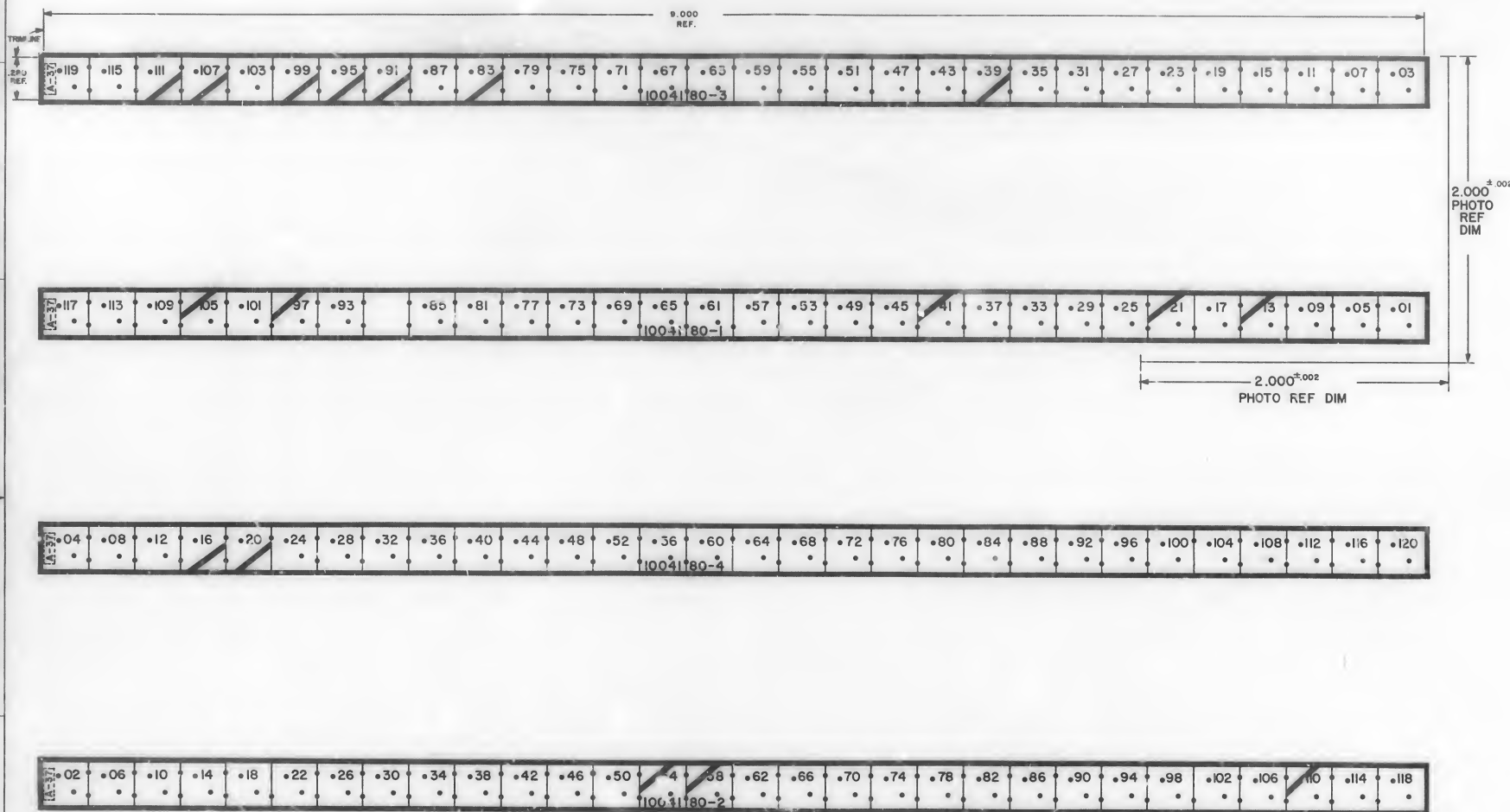


1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY AWS-D709.
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .005 INCH PER INCH.
3. MAKE MASTER ATTEN PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN.
4. CUT TO WITHIN .005 OF TOLERANCE.
5. MATERIAL .008/.010 INCH THICK PLASTIC SHEETS SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE II, CLASS 2, STYLE IA.
6. PUNCH HOLES TO .040 DIAMETER.

DESK (PRINT)		START-UP (STARTING POINT, IN)		NO. OF INCHES TO (END OF TAP)	
1/2 IN. MATERIAL		M I T INSTRUMENTATION L I B CENTER		MANUEL SPACECRAFT CENTER MD-105N, 15885	
LINEAR THERMISTE SPECIFIED (LONG-TIME AND IN SHORTS) THERMISTE IN		TAP LENGTH (DETAILED) ANGLE		IDENTIFICATION TAPE LOGIC MODULE NO. A-26	
TAP LENGTH .008 (DO NOT PUT TAP DEPTH, MATERIAL)		SEE NOTE 5		NADA APPROVAL NO. 1004179	
MAX. DIST. INCH (CM)		MAX. TENSION		NADA APPROVAL NO. 1004179	
(APPLICABLE)		MAX. APPROVAL NO. 1004179		NADA APPROVAL NO. 1004179	



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OF METHOD F SHALL INSURE DIMENSIONAL STABILITY, DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH  
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN  
4. CUT TO W/IN .002 OF TRIMLINE  
5. MATERIAL .006 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE II, CLASS 2, STYLE 1A  
6. PUNCH HOLES TO .040 DIAMETER



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OF METHOD F SHALL INSURE DIMENSIONAL STABILITY, DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO W/IN .002 OF TRIMLINE
  5. MATERIAL .006 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-F-340, TYPE II, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG.  
WIRING DIAGRAM 1006130

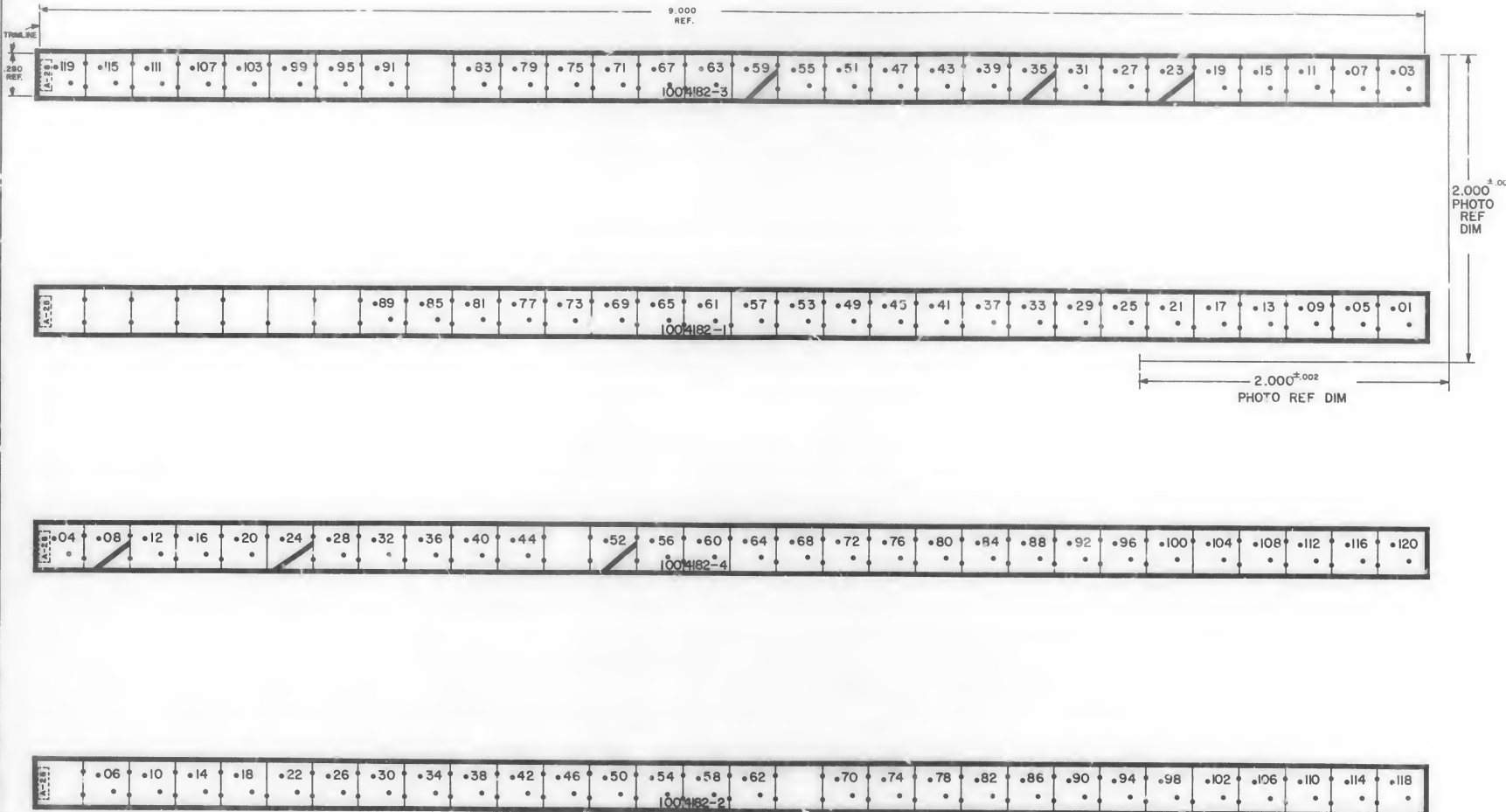
QTY. PARTS REQD. IDENTIFYING NO.		MANNED SPACECRAFT CENTER POSITION, ROOM	
INSTRUMENTATION LAB CHECKED BY: [Signature] DATE: 8/1/66 APPROVED BY: [Signature] DATE: 8/1/66		IDENTIFICATION TAPE LOGIC MODULE NO. A-37	
SEE NOTE 5		NASA APPROVAL: [Signature] DATE: 8/1/66	
NEXT DATE USED ON	APPLICATION	SCALE: 4/1	SHEET 1 OF 1



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7027
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .004 INCH PER .1 INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .002 OF TRIMLINE
  5. MATERIAL: CONFORMS TO PLASTIC SHEETS SENSTIZED, DIMENSIONALLY STABLE PER L-P-34, TYPE 2A, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG  
WIRING DIAGRAM 00613

DATE: 10/1/63 REV: 1		DRAWN BY: J. J. JONES CHECKED BY: J. J. JONES APPROVED BY: J. J. JONES		DATE: 10/1/63 REV: 1	
MANNED SPACECRAFT CENTER HOUSTON, TEXAS		IDENTIFICATION TAPE LOGIC MODULE NO. A38		NASA DRAWING NO. E 1004181	
NEXT ASSY: USED ON:		SCALE: 4/1		SHEET: 1 OF 1	



# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
4. CUT TO WITHIN .010 OF THIN LINE
5. MATERIAL: .006/.008 THICK PLASTIC SHEETS SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE IB, CLASS 2, STYLE 1A
6. PUNCH HOLES TO .040 DIAMETER

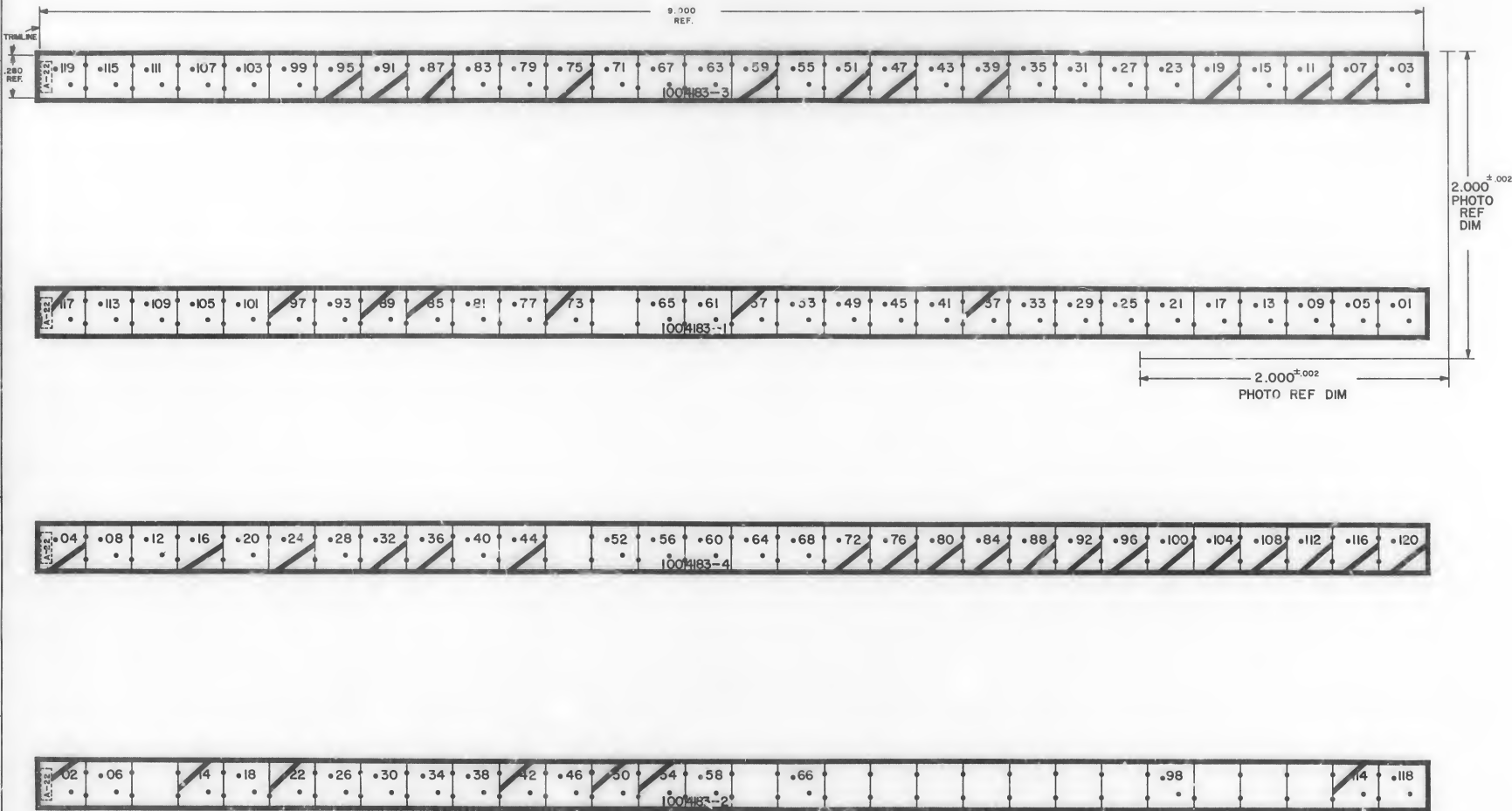
REFERENCE DWG. 1006182

QTY. (REVISIONS)		PART OR IDENTIFYING NO.		MATERIAL (IF APPLICABLE)	
MANNED SPACECRAFT CENTER HOUSTON TEXAS		IDENTIFICATION TAPE LOGIC MODULE NO. A-28			
DATE 10/1/63		BY J. S. Galt		CHECKED J. S. Galt	
DESIGNED J. S. Galt		DRAWN J. S. Galt		APPROVED J. S. Galt	
CHECKED J. S. Galt		APPROVED J. S. Galt		APPROVED J. S. Galt	
NEXT REVIEW DATE		NEXT REVIEW DATE		NEXT REVIEW DATE	
APPLICATION DATE		APPLICATION DATE		APPLICATION DATE	



THIS DRAWING IS THE PROPERTY OF THE U.S. AIR FORCE. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE U.S. AIR FORCE.

REVISIONS  
 DATE APPROVAL  
 A REVISED PER TDRN 1004183-1



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL BE SUPPLIED. DIMENSIONAL STABILITY, DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .001 OF TRIMLINE
  5. MATERIAL: .005/.008 VDC PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-P-340, TYPE IS, CLASS 2, STYLE IA
  6. PUNCH HOLER TO .040 DIAMETER

REFERENCE DWG.  
 1. WIRING DIAGRAM 1006133

QTY. REQUIRED IDENTIFYING NO.		PART FOR IDENTIFYING NO.		MATERIALS	
MTF IMPLEMENTATION LAB 1004183-1		MANNED SPACE RAFT CENTER IDENTIFYING NO.		IDENTIFICATION TAPE LOGIC MODULE NO A-22	
CHECKED BY: [Signature] APPROVED BY: [Signature] DATE: 10/1/64		CHECKED BY: [Signature] APPROVED BY: [Signature] DATE: 10/1/64		DATE IDENT NO. SUB. E 1004183	
NEXT REVISION DATE: 10/1/64		NEXT REVISION DATE: 10/1/64		SCALE 4/1	



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS ON METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .003 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .001 OF TRIMLINE
  5. MATERIAL .004/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-7-340, TYPE II, CLASS 2 STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG  
L WIRING DIAGRAM 1006134

1	1004184-4	IDENTIFICATION TAPE	4
1	1004184-3	IDENTIFICATION TAPE	3
1	1004184-2	IDENTIFICATION TAPE	2
1	1004184-1	IDENTIFICATION TAPE	1

MTF INSTRUMENTATION LAB FUNCTION: _____ DATE: _____ BY: _____ CHECKED: _____ APPROVAL: _____ SEE NOTE 5		MANNED SPACECRAFT CENTER ACQUISITION TEAM <b>IDENTIFICATION TAPE LOGIC MODULE NO. A25</b> NASA APPROVAL: _____ DATE: _____ SCALE: 4/1	
NEXT TEST: _____ USED ON: _____ APPLICATION: _____	TEST TEMPLATES: _____ TEST TEMPLATES: _____ TEST TEMPLATES: _____	NASA APPROVAL: _____ DATE: _____ SCALE: 4/1	NASA APPROVAL: _____ DATE: _____ SCALE: 4/1

6  
5  
4  
3  
2  
1

REVISED PER TOUR  
A

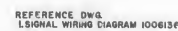


- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL VARIATIONS SHALL NOT EXCEED .01 INCH PER INCH
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  4. CUT TO WITHIN .005 OF THICKNESS
  5. MATERIAL .006/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER 1-P-340, TYPE II, CLASS 2, STYLE 1A
  6. PUNCH HOLES TO .040 DIAMETER

REFERENCE DWG. L.V. RING DIAGRAM 1006135

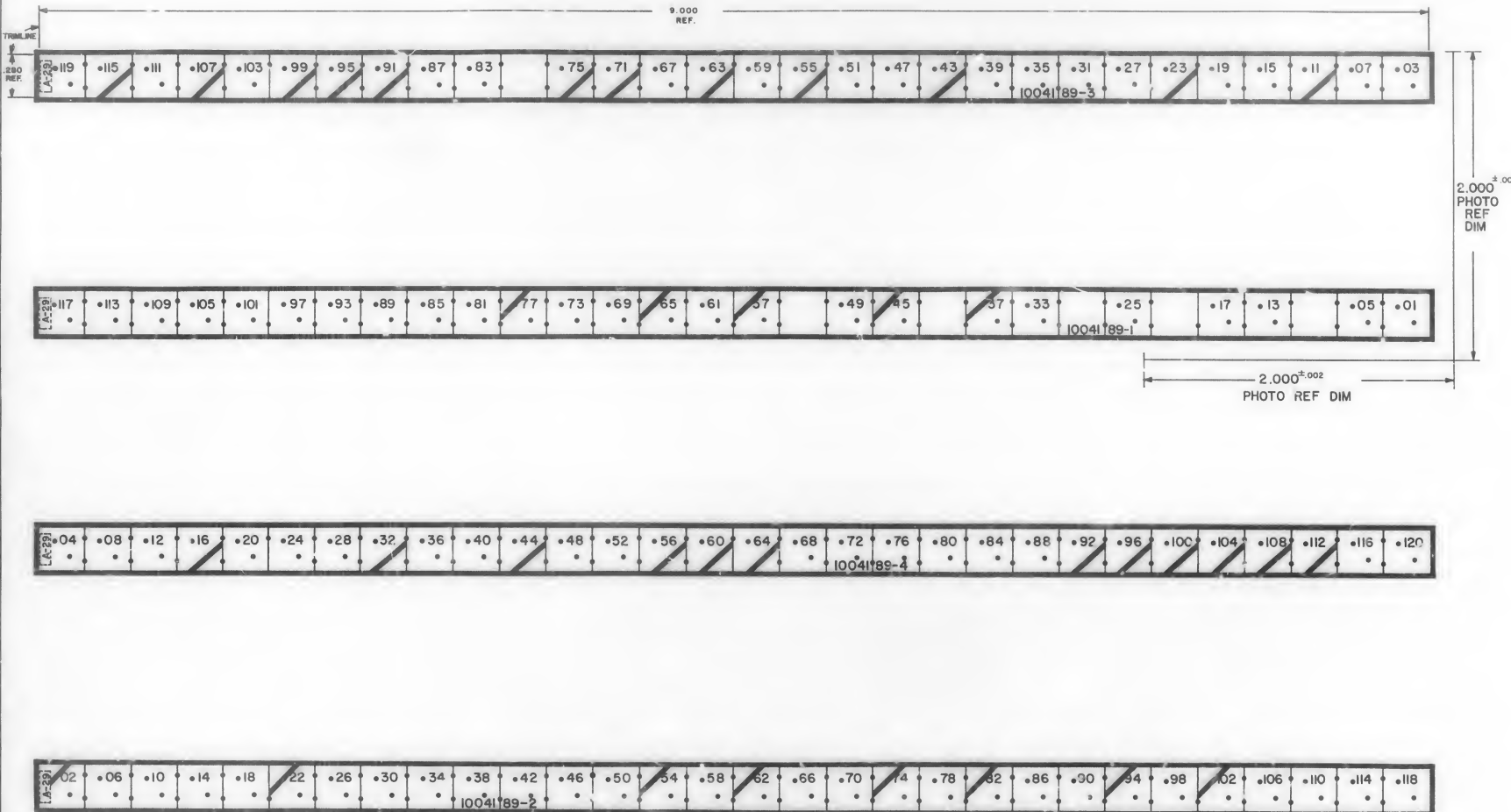
PART OF IDENTIFICATION TAPE		MANNED SPACECRAFT CENTER	
IDENTIFICATION LAB		LOGIC MODULE NO. A-24	
SEE NOTE 5		E 1004185	
DATE APPROVAL 6/2/63		SCALE 4/1	





- [illegible]





- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70-127.
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .005 INCH PER INCH.
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN.
  4. CUT TO WITHIN .005 OF TRIMLINE.
  5. MATERIAL .008/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-7-340, TYPE II, CLASS 2, STYLE 1A.
  6. .040 PINCH HOLES TO .040 DIAMETER.

REFERENCE DWG.  
WIRING DIAGRAM 100639

QTY. 1 PART NO. 1004189-1 IDENTIFYING NO.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
INSTRUMENTATION LAB LAMARCA, TEXAS PREPARED BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature]		IDENTIFICATION TAPE LOGIC MODULE NO. A-29	
SEE NOTE 5		DATE PREPARED: 10/1/65 DATE CHECKED: 10/1/65 DATE APPROVED: 10/1/65	
NEXT REVIEW: 10/1/66 USED ON: [Blank]		NASA APPROVAL: [Signature] DATE PREPARED: 10/1/65 DATE CHECKED: 10/1/65 DATE APPROVED: 10/1/65	
APPLICATION: [Blank]		SCALE: 4/1 SHEET: 1 OF 1	

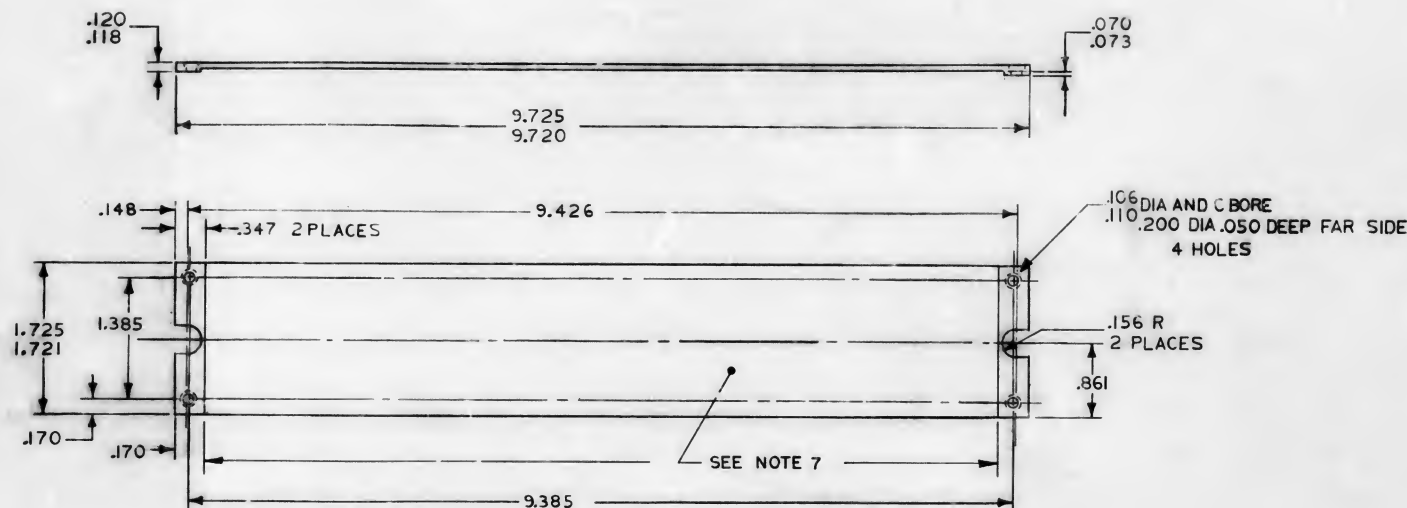


NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO LIABILITY FOR ANY INADEQUACIES, OMISSIONS, OR ERRORS, AND THE FACT THAT THE GOVERNMENT MAY HAVE PROVIDED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS TO ANY MANNER IN WHICH THE SAME OR ANY OTHER PERSON OR CORPORATION, OR COMPANY, HAS ANY RIGHTS OR PERMISSIONS TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

1004190

REVISIONS 01749

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 10735 DR P. Bouchard Jr. CHK Z. L. R. H. R. H.	7/20/64	R. H. R. H.



# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK60A-T5 PER QQ-M-31
3. FINISH: ANODIZE PER MIL-M-3171 TYPE II
4. ALL SURFACES UNLESS OTHERWISE SPECIFIED
5. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015
6. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .010 MAX
7. SPRAY COAT INDICATED SURFACE WITH CLEAR EPOXY PER ND 1002035, EXCEPT TO .005-.015 DEPTH

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
$\pm \frac{1}{16}$	$\pm .005$	$\pm \frac{1}{2}$
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE 2		
HEAT TREATMENT		
FINAL FINISH		
SEE NOTE 4		
APPLICATION		

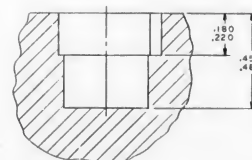
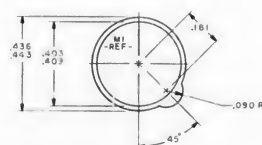
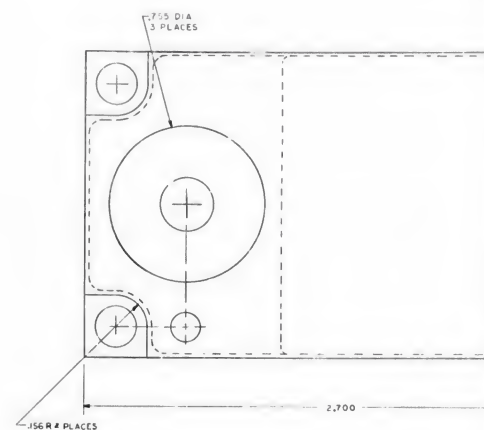
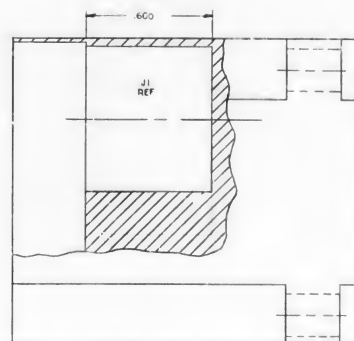
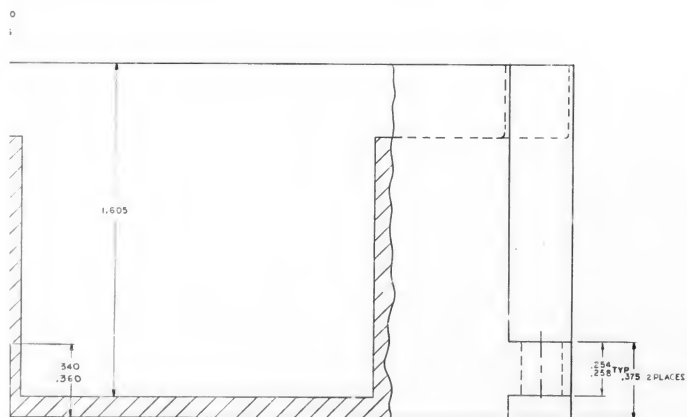
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.	
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
FIG. NO. _____ CONTRACT _____		COVER ERASABLE MEMORY MODULE		
DRAWN <i>W. J. W. J.</i> DATE <i>6/1/63</i>				
CHECKED <i>R. H. R. H.</i> DATE <i>10/1/63</i>				
APPROVAL <i>W. J. W. J.</i> DATE <i>26 JUNE 63</i>				
APPROVAL <i>W. J. W. J.</i> DATE <i>26/62</i>				
NASA APPROVAL <i>W. J. W. J.</i> <i>6/26-63</i>		CODE IDENT NO. _____	SIZE <b>C</b>	NASA DRAWING NO. <b>1004190</b>
MIT APPROVAL <i>W. J. W. J.</i> DATE <i>26/63</i>		SCALE: <i>1/1</i>	WT _____	SHEET <i>1</i> OF <i>1</i>

SECTION AA

SECTION BB

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
2. MATERIAL: MAGNESIUM ALL-Y 2K-60A-T5 PER GG-M-31  
3. FINISH: ANODIZE PER MIL-M-6502, TYPE I, CLASS C  
4. TRUE POSITIONING AS SHOWN IN CHART  
5. UNLESS OTHERWISE SPECIFIED 12/4 ALL OVER  
6. REMOVE ALL BURRS AND BREAK SHARP EDGES .003-.015  
7. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADI .005/.020  
8. ORIGINAL DIMENSIONAL OF THIS DIM IS INDICATED BY THE DASH  
9. THIS IS A GOOD SKETCH



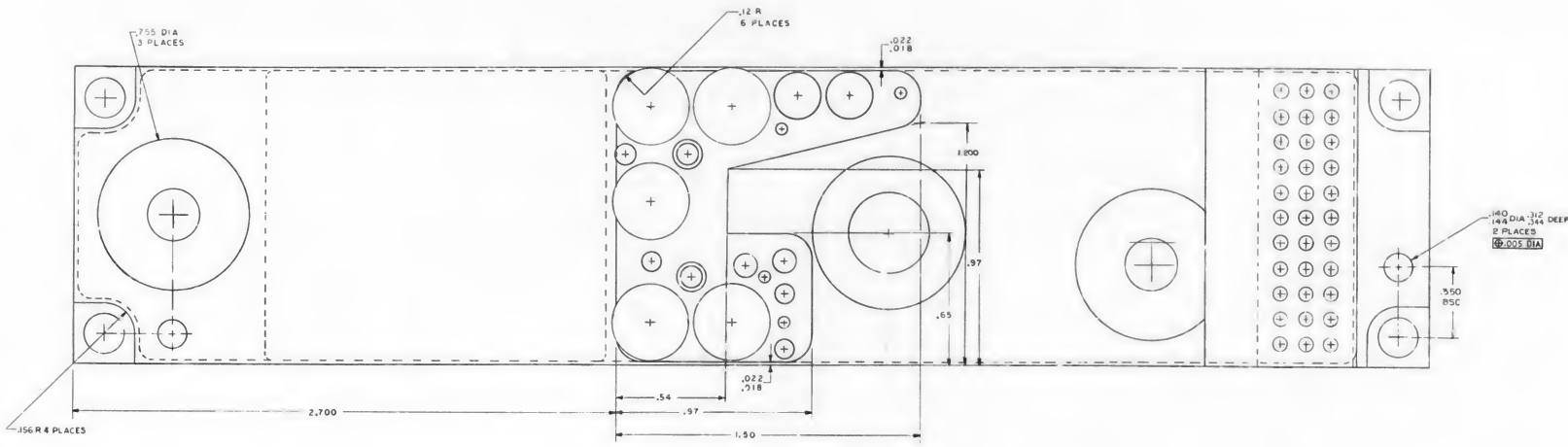


DETAIL A  
1" HOLE



004191 K

01	DATE	02-01-78	TIME	08:00
A	REVISED PER TORR	02/01/78		
B	REVISED PER TORR	02/01/78		
C	REVISED PER TORR	02/01/78		
D	REVISED PER TORR	02/01/78		
E	REVISED PER TORR	02/01/78		
F	REVISED PER TORR	02/01/78		
G	REVISED PER TORR	02/01/78		
H	REVISED PER TORR	02/01/78		
I	REVISED PER TORR	02/01/78		
J	REVISED PER TORR	02/01/78		
K	REVISED PER TORR	02/01/78		

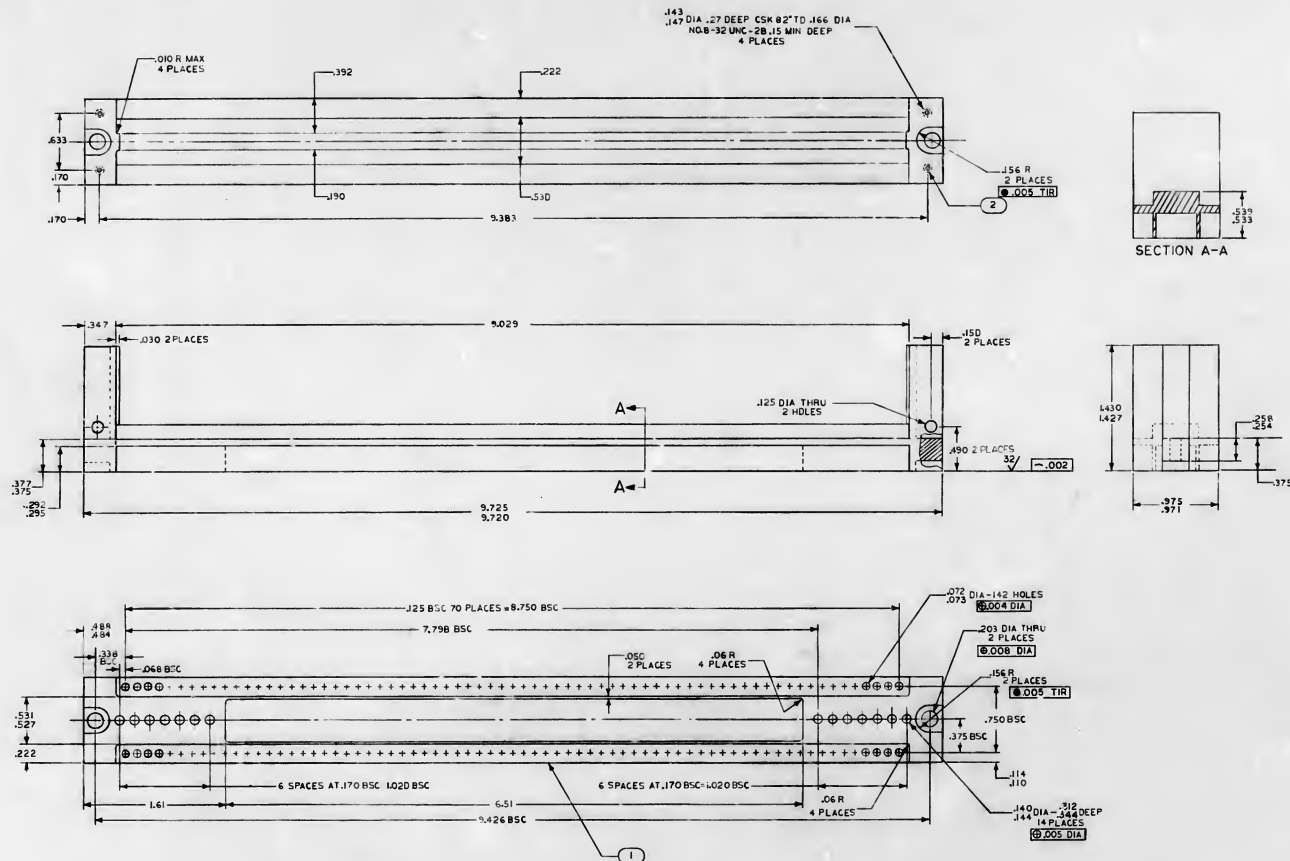


1004191 K

F 3 / 3

[illegible]

REVISIONS TDR 02048				
ETH	DESCRIPTION	DATE	INITIAL	
A	REVISED FOR TDR 04353	5/6/79	JAC	WIL
B	REVISED PER TORR 08411 DRA 080000 CHK RFR RFR	5/1/79	JAC	KUC



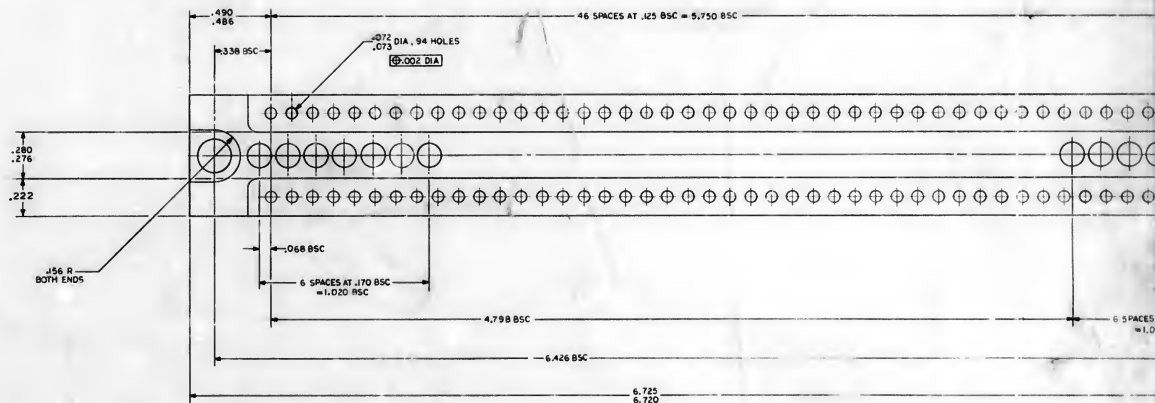
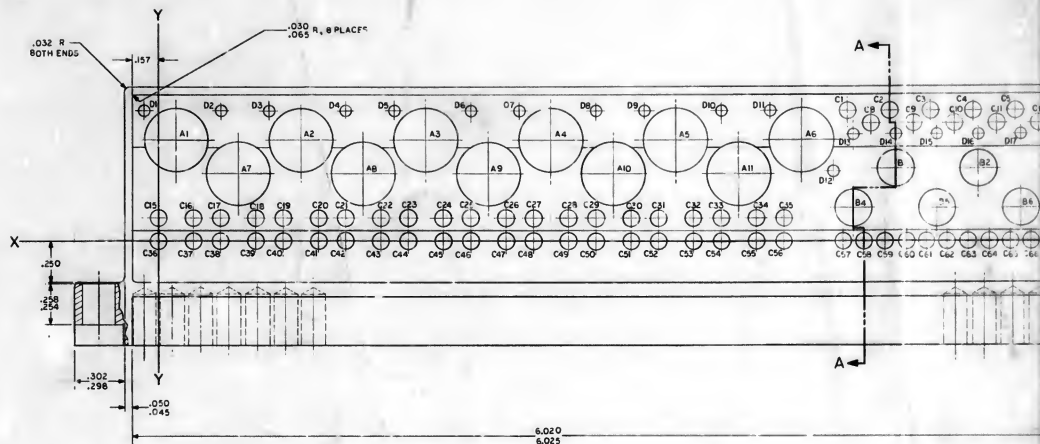
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70007
  2. MATERIAL: MAGALLOY ZN60-75 PER QQ-M-31
  3. FINISH: ANODIZE PER MIL-M-45202, TYPE 1, CLASS C
  4. ALL SURFACES -.25/ UNLESS OTHERWISE SPECIFIED
  5. INSTALL FID NUG PER ND-1002121
  6. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015
  7. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADI TO BE .010 MAX

4	100115-1	INSERT, THREE-AXIS SELF LOCKING	2
1	1004192-1	HEADER HOUSING	
QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIG NO
REQ			
LIST OF MATERIALS			
M T V INSTRUMENTATION LAB COLUMBIA MISSOURI		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DATE	DATE		
DESIGN BY <i>W. H. H. H.</i>	DATE <i>10/1/63</i>		
CHECKED BY <i>W. H. H. H.</i>	DATE <i>10/1/63</i>		
APPROVAL BY <i>W. H. H. H.</i>	DATE <i>10/1/63</i>		
APPROVAL BY <i>W. H. H. H.</i>	DATE <i>10/1/63</i>		
MASS APPROVAL <i>W. H. H. H.</i>	DATE <i>10/1/63</i>	COOD GENT NO	SIZE
NET APPROVAL <i>W. H. H. H.</i>	DATE <i>10/1/63</i>		
		MASS (DRAWING TO)	
		1004192	

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS AND "X" .005 DO NOT SCALE THE DRAWING
1003165	MATERIAL
1003153	SEE NOTE 4
1003132	HEAT TREATMENT
NEXT ASSY USED ON	FINAL FINISH
Author and Date:	SEE NOTE 3

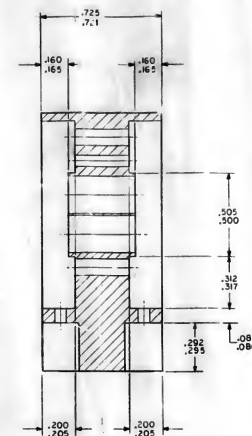
HOLE IDENT	X BASIC DIM	Y BASIC DIM	Ø DIA	HOLE DIA	QTY
A1	.005	.610			
A2	.005	.610			
A3	1.605	.610			
A4	2.355	.610			
A5	3.105	.610			
A6	3.855	.610			
A7	4.605	.610			
A8	5.355	.610			
A9	6.105	.610			
A10	6.855	.610			
A11	7.605	.610			
B1	4.417	.335			
B2	4.917	.335			
B3	5.417	.335			
B4	4.167	.200			
B5	4.667	.200			
B6	5.167	.200			
B7	5.667	.200			
C1	4.132	.785			
C2	4.382	.785			
C3	4.632	.785			
C4	4.882	.785			
C5	5.132	.785			
C6	5.382	.785			
C7	5.632	.785			
C8	4.277	.710			
C9	4.527	.710			
C10	4.777	.710			
C11	5.027	.710			
C12	5.277	.710			
C13	5.527	.710			
C14	5.777	.710			
C15	6.027	.710			
C16	6.277	.710			
C17	6.527	.710			
C18	6.777	.710			
C19	7.027	.710			
C20	7.277	.710			
C21	7.527	.710			
C22	7.777	.710			
C23	8.027	.710			
C24	8.277	.710			
C25	8.527	.710			
C26	8.777	.710			
C27	9.027	.710			
C28	9.277	.710			
C29	9.527	.710			
C30	9.777	.710			
C31	10.027	.710			
C32	10.277	.710			
C33	10.527	.710			
C34	10.777	.710			
C35	11.027	.710			
C36	11.277	.710			
C37	11.527	.710			
C38	11.777	.710			
C39	12.027	.710			
C40	12.277	.710			
C41	12.527	.710			
C42	12.777	.710			
C43	13.027	.710			
C44	13.277	.710			
C45	13.527	.710			
C46	13.777	.710			
C47	14.027	.710			
C48	14.277	.710			
C49	14.527	.710			
C50	14.777	.710			
C51	15.027	.710			
C52	15.277	.710			
C53	15.527	.710			
C54	15.777	.710			
C55	16.027	.710			
C56	16.277	.710			
C57	16.527	.710			
C58	16.777	.710			
C59	17.027	.710			
C60	17.277	.710			
C61	17.527	.710			
C62	17.777	.710			
C63	18.027	.710			
C64	18.277	.710			
C65	18.527	.710			
C66	18.777	.710			
C67	19.027	.710			
C68	19.277	.710			
C69	19.527	.710			
C70	19.777	.710			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	Ø DIA	HOLE DIA	QTY
D1	-.085	.785			
D2	3.375	.785			
D3	4.665	.785			
D4	1.125	.785			
D5	1.415	.785			
D6	1.875	.785			
D7	2.165	.785			
D8	2.625	.785			
D9	2.915	.785			
D10	3.375	.785			
D11	3.855	.785			
D12	4.245	.400			
D13	4.167	.640			
D14	4.417	.640			
D15	4.667	.640			
D16	4.917	.640			
D17	5.167	.640			
D18	5.417	.640			
D19	5.667	.640			

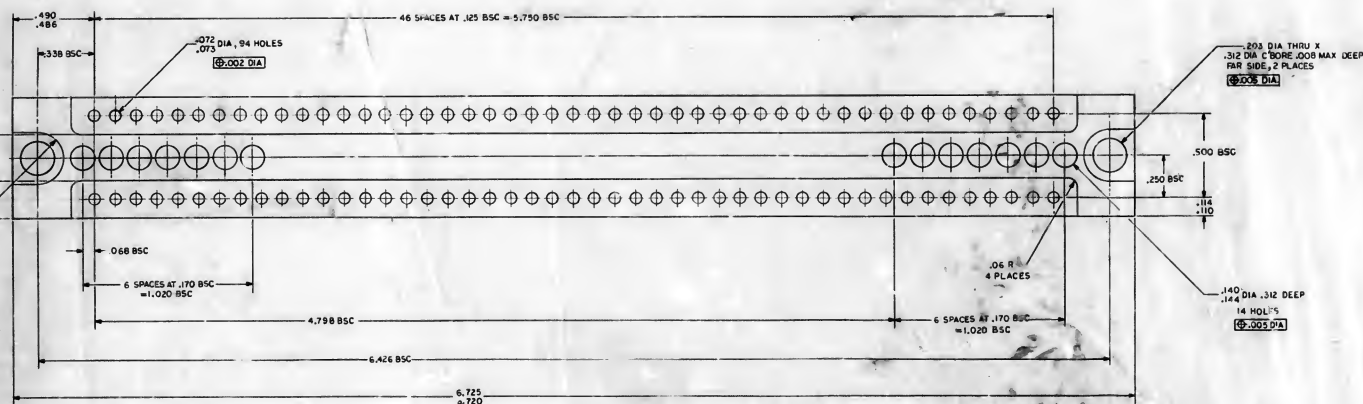


- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: MAGNESIUM ALLOY 2K-60A-T5 PER QQ-M-51A
  3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .005-.040
  4. UNLESS OTHERWISE SPECIFIED ALL OVER
  5. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015
  6. FINISH: ANODIZE PER MIL-M-3171, TYPE IV





SECTION A-A





F  
E  
D  
C  
B  
A

NOTES:  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
2. MATL: PLASTIC CLEAR ACRYLIC PER MIL-P-8184 FINISH B, ALT: MIL-P-54258 FINISH B  
3. TRUE POSITIONS SHOWN IN CHART  
4. REMOVE ALL SHARP EDGES

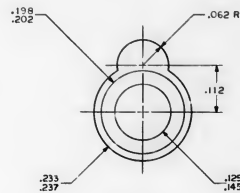
HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
A1	0.000	0.000			
A3	0.536				
A4	0.717				
A5	0.862				
A6	1.000				
A7	1.400				
A8	1.536				
A9	1.700				
A10	1.862				
A11	2.000				
A12	2.400				
A13	2.536				
A14	2.700				
A15	2.862				
A16	3.000				
A17	3.400				
A18	3.536				
A19	3.700				
A20	3.862				
A21	4.000				
A22	4.400				
A23	4.536				
A24	4.700				
A25	4.862				
A26	5.000				
A27	5.400				
A28	5.536				
A29	5.700				
A30	5.862				
A31	6.000				
A32	6.400				
A33	6.536				
A34	6.700				
A35	6.862				
A36	7.000				
A37	7.400				
A38	7.536				
A39	7.700				
A40	7.862				
A41	8.000				
A42	8.400				
A43	8.536	0.000			
A44	0.000	0.136			
A45	0.400				
A46	0.536				
A47	1.000				
A48	1.400				
A49	1.536				
A50	2.000				
A51	2.400				
A52	2.536				
A53	3.000				
A54	3.400				
A55	3.536				
A56	4.000				
A57	4.400				
A58	4.536				
A59	5.000				
A60	5.400				
A61	5.536				
A62	6.000				
A63	6.400				
A64	6.536				
A65	7.000				
A66	7.400				
A67	7.536	0.136			
A68	8.000	0.137			
A69	8.274	0.137			
A70	0.000	0.274			
A71	0.400				
A72	0.536				
A73	1.000				
A74	1.400				
A75	1.536				
A76	2.000				
A77	2.400				
A78	2.536				
A79	3.000				
A80	3.400				
A81	3.536				
A82	4.000				
A83	4.400				
A84	4.536				
A85	5.000				
A86	5.400				
A87	5.536				
A88	6.000				
A89	6.400				
A90	6.536				
A91	7.000				
A92	7.400				
A93	7.536	0.274			
A94	8.274	0.284			
A95	8.600	0.284			
A96	0.132	0.312			
A97	0.268				
A98	1.112				
A99	1.268				
A100	2.132				
A101	2.268				
A102	3.132				
A103	3.268				
A104	4.132				
A105	4.268				
A106	5.132				
A107	5.268				
A108	6.132	0.312			

HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
A109	6.268	0.312			
A110	7.132	0.312			
A111	7.268	0.312			
A112	0.536	0.410			
A113	0.717				
A114	0.862				
A115	1.536				
A116	1.700				
A117	1.862				
A118	2.536				
A119	2.700				
A120	2.862				
A121	3.536				
A122	3.700				
A123	3.862				
A124	4.536				
A125	4.700				
A126	4.862				
A127	5.536				
A128	5.700				
A129	5.862				
A130	6.536				
A131	6.700				
A132	6.862				
A133	7.536				
A134	7.700				
A135	7.862	0.410			
A136	8.410	0.410			
A137	0.132	0.450			
A138	0.268				
A139	1.132				
A140	1.268				
A141	2.132				
A142	2.268				
A143	3.132				
A144	3.268				
A145	4.132				
A146	4.268				
A147	5.132				
A148	5.268				
A149	6.132				
A150	6.268				
A151	7.132				
A152	7.268	0.450			
A153	0.000	0.480			
A154	0.400				
A155	1.000				
A156	1.400				
A157	2.000				
A158	2.400				
A159	3.000				
A160	3.400				
A161	4.000				
A162	4.400				
A163	5.000				
A164	5.400				
A165	6.000				
A166	6.400				
A167	7.000				
A168	7.400	0.483			
A169	0.620	0.520			
A170	1.620				
A171	2.620				
A172	3.620				
A173	4.620				
A174	5.620				
A175	6.620				
A176	7.620	0.520			
A177	8.450	0.545			
A178	0.862	0.546			
A179	1.862				
A180	2.862				
A181	3.862				
A182	4.862				
A183	5.862				
A184	6.862				
A185	7.862	0.546			
A186	0.000	0.619			
A187	0.000				
A188	1.000				
A189	1.400				
A190	2.000				
A191	2.400				
A192	3.000				
A193	3.400				
A194	4.000				
A195	4.400				
A196	5.000				
A197	5.400				
A198	6.000				
A199	6.400				
A200	7.000				
A201	7.400	0.619			
A202	8.400	0.632			
A203	8.375	0.663			
A204	0.000	0.756			
A205	0.400				
A206	1.000				
A207	1.400				
A208	2.000				
A209	2.400				
A210	3.000				
A211	3.400				
A212	4.000				
A213	4.400				
A214	5.000				
A215	5.400				
A216	6.000	0.756			

HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
A217	6.400	0.756			
A218	7.000				
A219	7.400				
A220	8.000				
A221	8.132				
A222	8.274	0.756			
B1	0.470	0.360			
B2	1.470				
B3	2.470				
B4	3.470				
B5	4.470				
B6	5.470				
B7	6.470				
B8	7.470	0.540			
B9	8.040	0.378			
B10	0.063				
B11	0.335				
B12	0.560				
B13	0.663				
B14	1.335				
B15	1.560				
B16	2.063				
B17	2.335				
B18	2.560				
B19	3.063				
B20	3.335				
B21	3.560				
B22	4.063				
B23	4.335				
B24	4.560				
B25	5.063				
B26	5.335				
B27	5.560				
B28	6.063				
B29	6.335				
B30	6.560				
B31	7.063				
B32	7.335	0.378			
B33	8.040	0.412			
B34	0.704	0.4612			
B35	1.704				
B36	2.704				
B37	3.704				
B38	4.704				
B39	5.704				
B40	6.704				
B41	7.704	0.482			
B42	0.715	0.527			
B43	1.715				
B44	2.715				
B45	3.715				
B46	4.715				
B47	5.715				
B48	6.715				
B49	7.715	0.527			
C1	0.200	0.125			
C2	1.200				
C3	2.200				
C4	3.200				
C5	4.200				
C6	5.200				
C7	6.200				
C8	7.200	0.125			
C9	0.724	0.204			
C10	1.724				
C11	2.724				
C12	3.724				
C13	4.724				
C14	5.724				
C15	6.724				
C16	7.724	0.204			
C17	8.137	0.284			
C18	9.137	0.545			
C19	0.200	0.540			
C20	1.200				
C21	2.200				
C22	3.200				
C23	4.200				
C24	5.200				
C25	6.200				
C26	7.200	0.540			
D1	0.724	0.634			
D2	1.724				
D3	2.724				
D4	3.724				
D5	4.724				
D6	5.724				
D7	6.724				
D8	7.724	0.634			

HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
A223	0.000	0.000			
A224	0.400				
A225	0.800				
A226	1.200				
A227	1.600				
A228	2.000				
A229	2.400				
A230	2.800				
A231	3.200				
A232	3.600				
A233	4.000				
A234	4.400				
A235	4.800				
A236	5.200				
A237	5.600				
A238	6.000				
A239	6.400				
A240	6.800				
A241	7.200				
A242	7.600				
A243	8.000				
A244	8.400				
A245	8.800				
A246	9.200				
A247	9.600				
A248	10.000				
A249	10.400				
A250	10.800				
A251	11.200				
A252	11.600				
A253	12.000				
A254	12.400				
A255	12.800				
A256	13.200				
A257	13.600				
A258	14.000				
A259	14.400				
A260	14.800				
A261	15.200				
A262	15.600				
A263	16.000				
A264	16.400				
A265	16.800				
A266	17.200				
A267	17.600				
A268	18.000				
A269	18.400				
A270	18.800				
A271	19.200				
A272	19.600				
A273	20.000				
A274	20.400				
A275	20.800				
A276	21.200				
A277	21.600				
A278	22.000				
A279	22.400				
A280	22.800				
A281	23.200				
A282	23.600				
A283	24.000				
A284	24.400				
A285	24.800				
A286	25.200				
A287	25.600				
A288	26.000				
A289	26.400				
A290	26.800				
A291	27.200				
A292	27.600				
A293	28.000				
A294	28.400				
A295	28.800				
A296	29.200				
A297	29.600				
A298	30.000				
A299	30.400				
A300	30.800				
A301	31.200				
A302	31.600				
A303	32.000				
A304	32.400				
A305	32.800				
A306	33.200				
A307	33.600				
A308	34.000				
A309	34.400				
A310	34.800				
A311	35.200				
A312	35.600				
A313	36.000				
A314	36.400				
A315	36.800				
A316	37.200				
A317	37.600				
A318	38.000				
A319	38.400				
A320	38.800				
A321	39.200				
A322	39.600				
A323	40.000				
A324	40.400				
A325	40.800				
A326	41.200				
A327	41.600				
A328	42.000				
A329	42.400				
A330	42.800				
A331	43.200				
A332	43.600				
A333	44.000				
A334	44.400				
A335	44.800				
A336	45.200				
A337	45.600				
A338	46.000				
A339	46.400				
A340	46.800				
A341	47.200				
A342	47.600				
A343	48.000				
A344	48.400				
A345	48.800				
A346	49.200				
A347	49.600				
A348	50.000				
A349	50.400				
A350	50.800				
A351	51.200				
A352	51.600				
A353	52.000				
A354	52.400				
A355	52.800				
A356	53.200				
A357	53.600				
A358	54.000				
A359	54.400				
A360	54.800				
A361	55.200				
A362	55.600				
A363	56.000				
A364	56.400				
A365	56.800				
A366	57.200				
A367	57.600				
A368	58.000				
A369	58.400				
A370	58.800				
A371	59.200				
A372	59.600				
A373	60.000				
A374	60.400				
A375	60.800				
A376	61.200				
A377	61.600				
A378	62.000				
A379	62.400				
A380	62.800				
A381	63.200				
A382	63.600				
A383	64.000				
A384	64.400				
A385	64.800				
A386	65.200				
A387	65.600				
A388	66.000				
A389	66.400				
A390	66.800				
A391	67.200				
A392	67.600				
A393	68.000				
A394	68.400				
A395	68.800				
A396	69.200				
A397	69.600				
A398	70.000				
A399	70.400				
A400	70.800				
A401	71.200				
A402	71.600				
A403	72.000				
A404	72.400				
A405	72.800				
A406	73.200				
A407	73.600				
A408	74.000				
A409	74.400				
A410	74.800				
A411	75.200				
A412	75.600				
A413	76.000				
A414	76.400				
A415	76.800				
A416	77.200				
A417	77.600				
A418	78.000				
A419	78.400				
A420	78.800				
A421	79.200				
A422	79.600				
A423	80.000				
A424	80.400				
A425	80.800				
A426	81.200				
A427	81.600				
A428	82.000				
A429	82.400				
A430	82.800				
A431	83.200				
A432	83.600				
A433	84.000				
A434	84.400				
A435	84.800				
A436	85.200				
A437	85.600				
A438	86.000				
A439	86.400				
A440	86.800				
A441	87.200				
A442	87.600				
A443	88.000				
A444	88.400				
A445	88.800				
A446	89.200				
A447	89.600				
A448	90.000				
A449	90.400				
A450	90.800				
A451	91.200				
A452	91.600				
A453	92.000				
A454	92.400				
A455	92.800				
A456	93.200				
A457	93.600				
A458	94.000				
A459	94.400				
A460	94.800				
A461	95.200				
A462	95.600				
A463	96.000				
A464	96.400				
A465	96.800				
A466	97.200				
A467	97.600				
A468	98.000				
A469	98.400				
A470	98.800				
A471	99.200				
A472	99.600				
A473	100.000				
A474	100.400				
A475	100.800				
A476	101.200				
A477	101.600				
A478	102.000				
A479	102.400				
A480	102.800				
A481	103.200				
A482	103.600				
A483	104.000				
A484	104.400				
A485	104.800				
A486	105.200				
A487	105.600				
A488	106.000				
A489	106.400				
A490	106.800				
A491	107.200				
A492	107.600				
A493	108.000				
A494	108.400				
A495	108.800				
A496	109.200				
A497	109.600				
A498	110.000				
A499	110.400				
A500	110.800				
A501	111.200				
A502	111.600				
A503	112.000				
A504	112.400				
A505	112.800				
A506	113.200				
A507	113.600				
A508	114.000				
A509	114.400				
A510	114.800				
A511	115.200				
A512	115.600				
A513	116.000				
A514	116.400				
A515	116.800				
A516	117.200				
A517	117.600				
A518	118.000				
A519	118.400				
A520	118.800				
A521	119.200				
A522	119.600				
A523	120.000				
A524	120.400				
A525	120.800				
A526	121.200				
A527	121.600				
A528	122.000				
A529	122.400				
A530	122.800				
A531	123.200				
A532	123.600				
A533	124.000				
A534	124.400				
A535	124.800				
A536	125.200				
A537	125.600				
A					

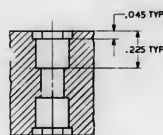




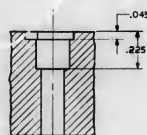
DETAIL A  
SCALE 10/1

SEE DETAIL A'  
TYP 26 PLACES

SEE DETAIL A  
TYP B PLACES



SECTION A-A  
SCALE 4/1



SECTION B-B  
SCALE 4/1

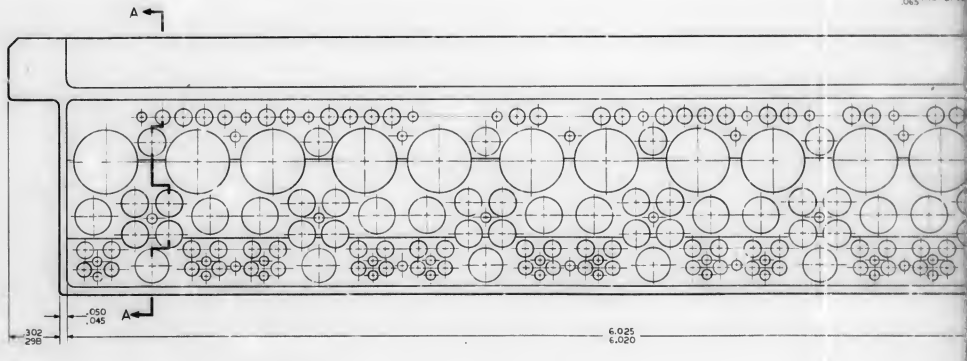
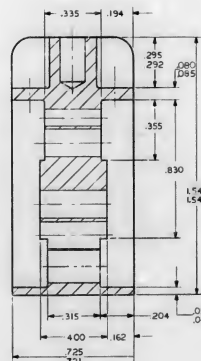
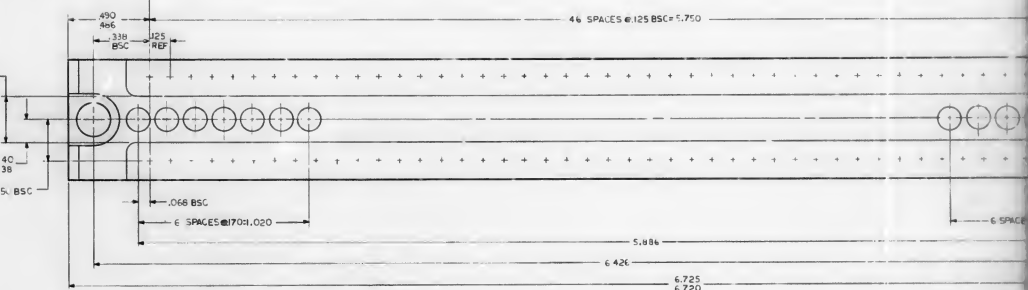
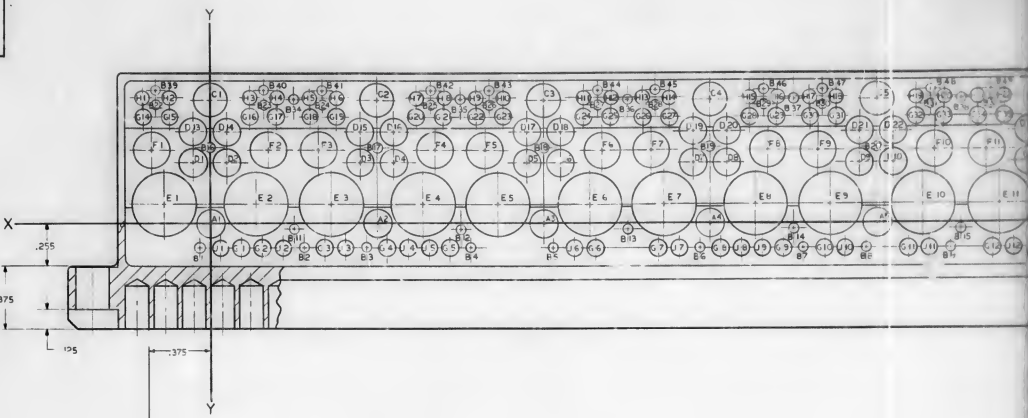
CITY REQD		PART OF IDENTIFYING NO		NONCLASSIFICATION OR ON DESCRIPTION		FILE NO	
M I T INSTRUMENTATION LAB SERIAL NO <u>1005</u> DATE <u>5/6/58</u> CHECKED PREPARED BY PERSONAL FILE NO				LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS HOLDER, COMPONENT ROPE STRAND SECT MODULE			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES .005 .010 .015 .020 .030 .040 .050 .060 .070 .080 .090 .100 .125 .150 .175 .200 .250 .300 .375 .500 .750 1.000 1.500 2.000 3.000 4.000 6.000 8.000 10.000 12.000 15.000 20.000 25.000 30.000 36.000 45.000 60.000 72.000 90.000 108.000 126.000 150.000 180.000 216.000 270.000 324.000 360.000 432.000 540.000 648.000 720.000 864.000 1080.000 1296.000 1620.000 1944.000 2160.000 2592.000 3110.400 3628.800 4354.560 5225.440 6350.520 7740.630 9388.750 11386.800 13862.400 16836.000 20419.200 24742.560 30000.000 36300.000 43560.000 52272.000 63528.000 77436.000 93948.000 113976.000 138720.000 168480.000 204240.000 247512.000 300120.000 363240.000 435960.000 523200.000 636480.000 775200.000 940800.000 1142400.000 1390080.000 1688160.000 2046720.000 2480640.000 3009600.000 3643200.000 4377600.000 5256000.000 6393600.000 7785600.000 9451200.000 11491200.000 13996800.000 16996800.000 20505600.000 24854400.000 30153600.000 36502400.000 43851200.000 52640000.000 64032000.000 77952000.000 94608000.000 115008000.000 139968000.000 169968000.000 205056000.000 248544000.000 301536000.000 365024000.000 438512000.000 526400000.000 640320000.000 779520000.000 946080000.000 1150080000.000 1399680000.000 1699680000.000 2050560000.000 2485440000.000 3015360000.000 3650240000.000 4385120000.000 5264000000.000 6403200000.000 7795200000.000 9460800000.000 11500800000.000 13996800000.000 16996800000.000 20505600000.000 24854400000.000 30153600000.000 36502400000.000 43851200000.000 52640000000.000 64032000000.000 77952000000.000 94608000000.000 115008000000.000 139968000000.000 169968000000.000 205056000000.000 248544000000.000 301536000000.000 365024000000.000 438512000000.000 526400000000.000 640320000000.000 779520000000.000 946080000000.000 1150080000000.000 1399680000000.000 1699680000000.000 2050560000000.000 2485440000000.000 3015360000000.000 3650240000000.000 4385120000000.000 5264000000000.000 6403200000000.000 7795200000000.000 9460800000000.000 11500800000000.000 13996800000000.000 16996800000000.000 20505600000000.000 24854400000000.000 30153600000000.000 36502400000000.000 43851200000000.000 52640000000000.000 64032000000000.000 77952000000000.000 94608000000000.000 115008000000000.000 139968000000000.000 169968000000000.000 205056000000000.000 248544000000000.000 301536000000000.000 365024000000000.000 438512000000000.000 526400000000000.000 640320000000000.000 779520000000000.000 946080000000000.000 1150080000000000.000 1399680000000000.000 1699680000000000.000 2050560000000000.000 2485440000000000.000 3015360000000000.000 3650240000000000.000 4385120000000000.000 5264000000000000.000 6403200000000000.000 7795200000000000.000 9460800000000000.000 11500800000000000.000 13996800000000000.000 16996800000000000.000 20505600000000000.000 24854400000000000.000 30153600000000000.000 36502400000000000.000 43851200000000000.000 52640000000000000.000 64032000000000000.000 77952000000000000.000 94608000000000000.000 11500800000000000							



HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
A 1	0.000	0.000			
A 2	1.000		170	.006	6
A 3	2.000		174		
A 4	3.000				
A 5	4.000				
A 6	5.000	0.000			
B 1	-0.062	-0.150			
B 2	0.562				
B 3	0.937				
B 4	1.562				
B 5	2.062				
B 6	2.937				
B 7	3.562				
B 8	3.937				
B 9	4.437				
B 10	4.937	-0.150			
B 11	0.500	-0.095			
B 12	1.500				
B 13	2.500				
B 14	3.500				
B 15	4.500	-0.095			
B 16	0.000	0.455			
B 17	1.000				
B 18	2.000				
B 19	3.000				
B 20	4.000				
B 21	5.000	0.455			
B 22	-0.325	0.750			
B 23	0.325				
B 24	0.675				
B 25	1.325				
B 26	1.675				
B 27	2.325				
B 28	2.675				
B 29	3.325				
B 30	3.675				
B 31	4.325				
B 32	4.675				
B 33	5.325	0.710			
B 34	0.500	0.745			
B 35	1.500				
B 36	2.500				
B 37	3.500				
B 38	4.500	0.745			
B 39	-0.325	0.500			
B 40	0.325				
B 41	0.675				
B 42	1.325				
B 43	1.675				
B 44	2.325				
B 45	2.675				
B 46	3.325				
B 47	3.675				
B 48	4.325				
B 49	4.675				
B 50	5.325	0.500			
C 1	0.000	0.740			
C 2	1.000				
C 3	2.000				
C 4	3.000				
C 5	4.000				
C 6	5.000	0.740			
D 1	-0.100	0.365			
D 2	0.100				
D 3	0.900				
D 4	1.100				
D 5	1.900				
D 6	2.100				
D 7	2.900				
D 8	3.100				
D 9	3.900				
D 10	4.100				
D 11	4.900				
D 12	5.100	0.365			
D 13	-0.100	0.550			
D 14	0.100				
D 15	0.900				
D 16	1.100				
D 17	1.900				
D 18	2.100				
D 19	2.900				
D 20	3.100				
D 21	3.900				
D 22	4.100				
D 23	4.900				
D 24	5.100	0.550			
E 1	-0.225	0.115			
E 2	0.225	0.115			

HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
F 1	-0.350	0.440			
F 2	0.350				
F 3	0.650				
F 4	1.350				
F 5	1.650				
F 6	2.350				
F 7	2.650				
F 8	3.350				
F 9	3.650				
F 10	4.350				
F 11	4.650				
F 12	5.350	0.440			
G 1	0.167	-0.150			
G 2	0.333				
G 3	0.667				
G 4	1.000				
G 5	1.333				
G 6	2.332				
G 7	2.667				
G 8	3.332				
G 9	3.667				
G 10	4.332				
G 11	4.667				
G 12	4.667				
G 13	5.000	-0.150			
G 14	-0.417	0.644			
G 15	-0.240				
G 16	0.240				
G 17	0.400				
G 18	0.600				
G 19	0.760				
G 20	1.240				
G 21	1.400				
G 22	1.600				
G 23	1.760				
G 24	2.240				
G 25	2.400				
G 26	2.600				
G 27	2.760				
G 28	3.240				
G 29	3.400				
G 30	3.600				
G 31	3.760				
G 32	4.240				
G 33	4.400				
G 34	4.600				
G 35	4.760				
G 36	5.240				
G 37	5.400	0.644			
H 1	-0.405	0.755			
H 2	-0.240				
H 3	0.240				
H 4	0.405				
H 5	0.595				
H 6	0.740				
H 7	1.240				
H 8	1.405				
H 9	1.595				
H 10	1.740				
H 11	2.240				
H 12	2.405				
H 13	2.595				
H 14	2.740				
H 15	3.240				
H 16	3.405				
H 17	3.595				
H 18	3.740				
H 19	4.240				
H 20	4.405				
H 21	4.595				
H 22	4.740				
H 23	5.240				
H 24	5.405	0.755			
J 1	0.062	-0.150			
J 2	0.437				
J 3	0.812				
J 4	1.187				
J 5	1.512	-0.150			

HOLE IDENT	BASIC X DIM	BASIC Y DIM	HOLE DIA	TOL	QTY
J 6	2.167	-0.150			
J 7	2.542				
J 8	3.167				
J 9	3.312				
J 10	3.512				
J 11	4.312				
J 12	4.612				
J 13	5.167	-0.150			

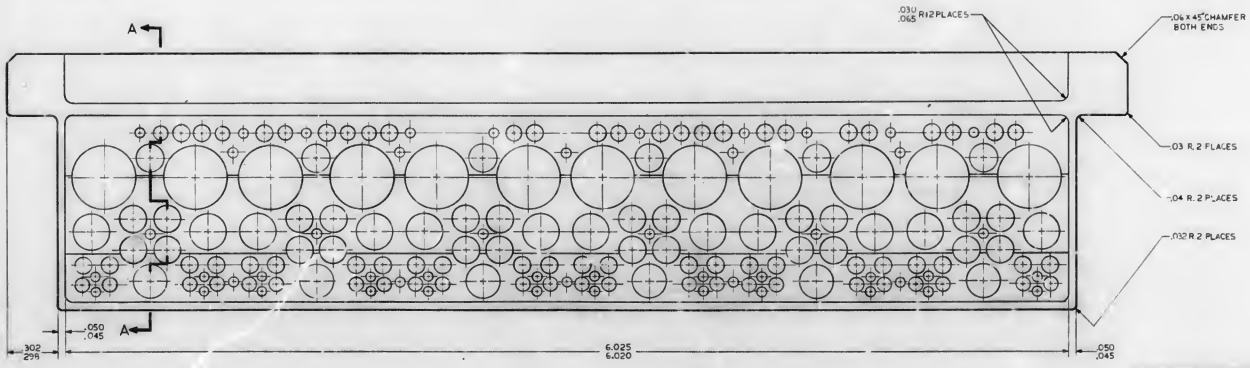
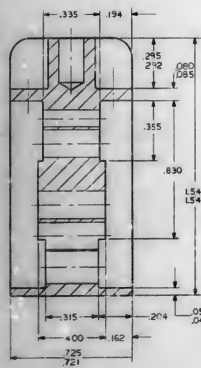
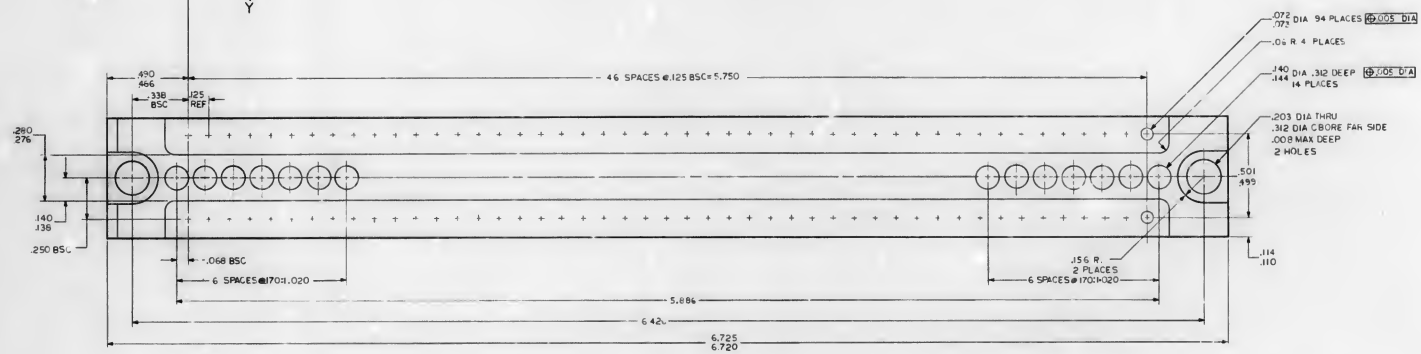
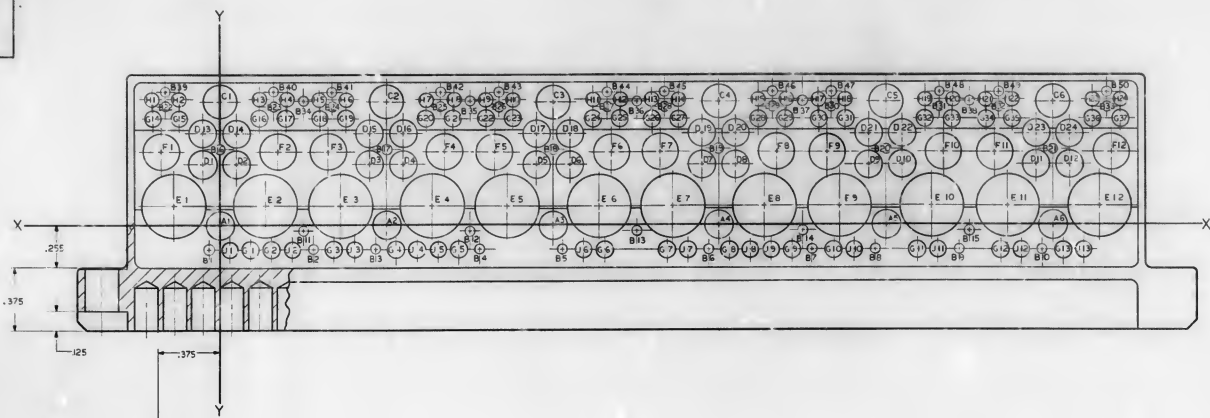


SECTION A-A  
SCALE: 4/1

1004197 A

- NOTES
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
  - PREScribed BY MIL-D-70327
  - MATERIAL: MAGNESIUM ALLOY ZK 60A-T5 PER QQM-31
  - FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-31 TYPE IV
  - TRUE POSITIONING AS SHOWN IN CHART
  - UNLESS OTHERWISE SPECIFIED, ALL OVER
  - REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015

BASIC DIM	HOLE DIA	TOL	QTY
.001	.001	.001	8
.002	.002	.002	8
.003	.003	.003	8
.004	.004	.004	8
.005	.005	.005	8
.006	.006	.006	8
.007	.007	.007	8
.008	.008	.008	8
.009	.009	.009	8
.010	.010	.010	8
.012	.012	.012	8
.015	.015	.015	8
.020	.020	.020	8
.025	.025	.025	8
.030	.030	.030	8
.035	.035	.035	8
.040	.040	.040	8
.045	.045	.045	8
.050	.050	.050	8
.055	.055	.055	8
.060	.060	.060	8
.065	.065	.065	8
.070	.070	.070	8
.075	.075	.075	8
.080	.080	.080	8
.085	.085	.085	8
.090	.090	.090	8
.095	.095	.095	8
.100	.100	.100	8
.105	.105	.105	8
.110	.110	.110	8
.115	.115	.115	8
.120	.120	.120	8
.125	.125	.125	8
.130	.130	.130	8
.135	.135	.135	8
.140	.140	.140	8
.145	.145	.145	8
.150	.150	.150	8
.155	.155	.155	8
.160	.160	.160	8
.165	.165	.165	8
.170	.170	.170	8
.175	.175	.175	8
.180	.180	.180	8
.185	.185	.185	8
.190	.190	.190	8
.195	.195	.195	8
.200	.200	.200	8
.205	.205	.205	8
.210	.210	.210	8
.215	.215	.215	8
.220	.220	.220	8
.225	.225	.225	8
.230	.230	.230	8
.235	.235	.235	8
.240	.240	.240	8
.245	.245	.245	8
.250	.250	.250	8
.255	.255	.255	8
.260	.260	.260	8
.265	.265	.265	8
.270	.270	.270	8
.275	.275	.275	8
.280	.280	.280	8
.285	.285	.285	8
.290	.290	.290	8
.295	.295	.295	8
.300	.300	.300	8
.305	.305	.305	8
.310	.310	.310	8
.315	.315	.315	8
.320	.320	.320	8
.325	.325	.325	8
.330	.330	.330	8
.335	.335	.335	8
.340	.340	.340	8
.345	.345	.345	8
.350	.350	.350	8
.355	.355	.355	8
.360	.360	.360	8
.365	.365	.365	8
.370	.370	.370	8
.375	.375	.375	8
.380	.380	.380	8
.385	.385	.385	8
.390	.390	.390	8
.395	.395	.395	8
.400	.400	.400	8
.405	.405	.405	8
.410	.410	.410	8
.415	.415	.415	8
.420	.420	.420	8
.425	.425	.425	8
.430	.430	.430	8
.435	.435	.435	8
.440	.440	.440	8
.445	.445	.445	8
.450	.450	.450	8
.455	.455	.455	8
.460	.460	.460	8
.465	.465	.465	8
.470	.470	.470	8
.475	.475	.475	8
.480	.480	.480	8
.485	.485	.485	8
.490	.490	.490	8
.495	.495	.495	8
.500	.500	.500	8
.505	.505	.505	8
.510	.510	.510	8
.515	.515	.515	8
.520	.520	.520	8
.525	.525	.525	8
.530	.530	.530	8
.535	.535	.535	8
.540	.540	.540	8
.545	.545	.545	8
.550	.550	.550	8
.555	.555	.555	8
.560	.560	.560	8
.565	.565	.565	8
.570	.570	.570	8
.575	.575	.575	8
.580	.580	.580	8
.585	.585	.585	8
.590	.590	.590	8
.595	.595	.595	8
.600	.600	.600	8
.605	.605	.605	8
.610	.610	.610	8
.615	.615	.615	8
.620	.620	.620	8
.625	.625	.625	8
.630	.630	.630	8
.635	.635	.635	8
.640	.640	.640	8
.645	.645	.645	8
.650	.650	.650	8
.655	.655	.655	8
.660	.660	.660	8
.665	.665	.665	8
.670	.670	.670	8
.675	.675	.675	8
.680	.680	.680	8
.685	.685	.685	8
.690	.690	.690	8
.695	.695	.695	8
.700	.700	.700	8
.705	.705	.705	8
.710	.710	.710	8
.715	.715	.715	8
.720	.720	.720	8
.725	.725	.725	8
.730	.730	.730	8
.735	.735	.735	8
.740	.740	.740	8
.745	.745	.745	8
.750	.750	.750	8
.755	.755	.755	8
.760	.760	.760	8
.765	.765	.765	8
.770	.770	.770	8
.775	.775	.775	8
.780	.780	.780	8
.785	.785	.785	8
.790	.790	.790	8
.795	.795	.795	8
.800	.800	.800	8
.805	.805	.805	8
.810	.810	.810	8
.815	.815	.815	8
.820	.820	.820	8
.825	.825	.825	8
.830	.830	.830	8
.835	.835	.835	8
.840	.840	.840	8
.845	.845	.845	8
.850	.850	.850	8
.855	.855	.855	8
.860	.860	.860	8
.865	.865	.865	8
.870	.870	.870	8
.875	.875	.875	8
.880	.880	.880	8
.885	.885	.885	8
.890	.890	.890	8
.895	.895	.895	8
.900	.900	.900	8
.905	.905	.905	8
.910	.910	.910	8
.915	.915	.915	8
.920	.920	.920	8
.925	.925	.925	8
.930	.930	.930	8
.935	.935	.935	8
.940	.940	.940	8
.945	.945	.945	8
.950	.950	.950	8
.955	.955	.955	8
.960	.960	.960	8
.965	.965	.965	8
.970	.970	.970	8
.975	.975	.975	8
.980	.980	.980	8
.985	.985	.985	8
.990	.990	.990	8
.995	.995	.995	8
1.000	1.000	1.000	8



SECTION A-A  
SCALE: 4/1

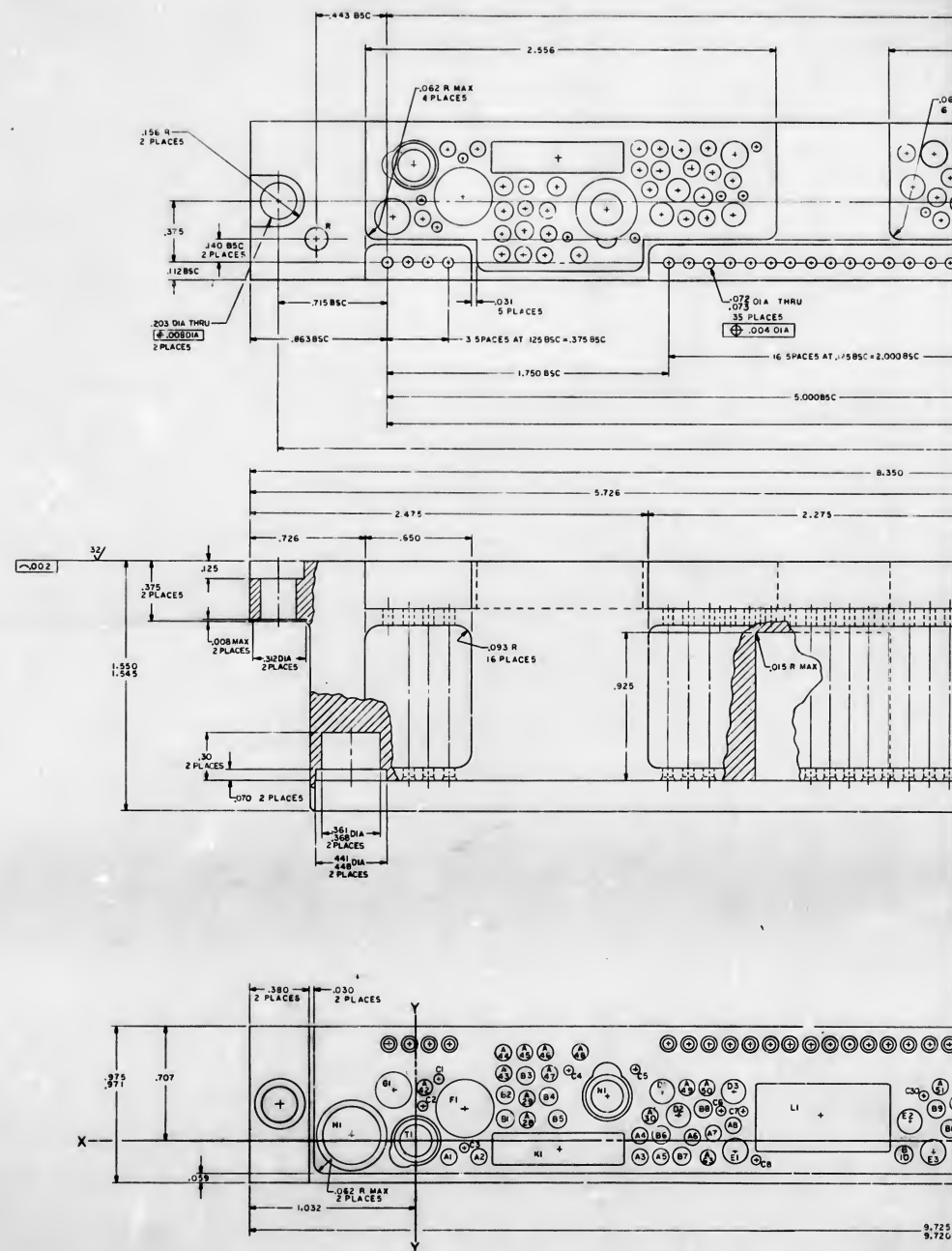
1004197 A

QTY REQD	PART OR IDENTIFYING P.	DESCRIPTION	UNIT								
LIST OF MATERIALS											
MANNED SPACECRAFT CENTER HOUSTON, TEXAS											
HEADER, HOUSING INTERFACE MODULE A20 OR A40											
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 2 HEAT TREATMENT NEXT ASSY USED ON APPLICATION											
<table border="1"> <tr> <td>1004197</td> <td>7-1-67</td> <td>J</td> <td>1004197</td> </tr> <tr> <td>DESIGNER</td> <td>CHECKED</td> <td>APPROVED</td> <td>DATE</td> </tr> </table>				1004197	7-1-67	J	1004197	DESIGNER	CHECKED	APPROVED	DATE
1004197	7-1-67	J	1004197								
DESIGNER	CHECKED	APPROVED	DATE								



HOLE IDENT	X BASIC DIM	Y BASIC DIM	Ø DIA	HOLE DIA	QTY
A1	2.08	-1.03	.006		
A2	.392	-1.03			
A3	1.422	-1.03			
A4	1.422	-1.30			
A5	1.532	-1.03			
A6	1.250	-1.03			
A7	1.863	-1.03			
A8	1.985	-1.03			
A9	7.605	-1.33			
A10	7.101	-1.39			
A11	7.101	-1.39			
A12	3.008	-1.03			
A13	5.826	-1.03			
A14	6.763	-1.03			
A15	5.394	-1.03			
A16	5.380	-1.04			
A17	5.520	-1.04			
A18	5.522	-1.04			
A19	5.522	-1.04			
A20	5.797	-1.04			
A21	5.930	-1.03			
A22	6.128	-1.03			
A23	6.258	-1.03			
A24	6.598	-1.03			
A25	6.981	-1.33			
A26	7.267	-1.03			
A27	7.552	-1.03			
A28	7.891	-1.33			
A29	8.187	-1.39			
A30	1.471	-1.52			
A31	3.726	-2.46			
A32	4.286	-2.96			
A33	4.657	-3.50			
A34	4.947	-2.40			
A35	4.934	-1.36			
A36	4.808	-1.40			
A37	4.899	-2.42			
A38	5.150	-2.21			
A39	5.532	-1.87			
A40	6.189	-1.82			
A41	5.981	-1.62			
A42	5.553	-1.33			
A43	5.550	-1.20			
A44	5.550	-1.50			
A45	6.291	-1.50			
A46	6.336	-1.50			
A47	6.336	-1.50			
A48	1.032	-1.50			
A49	1.894	-1.33			
A50	1.825	-1.33			
A51	3.284	-1.33			
A52	3.420	-1.33			
A53	4.660	-1.32			
A54	5.026	-1.33			
A55	5.134	-1.33			
A56	5.370	-1.33			
A57	5.835	-1.33			
A58	5.966	-1.33			
A59	6.628	-1.50			
A60	6.624	-1.52			
A61	6.624	-1.50			
A62	6.961	-1.50			
A63	1.927	-1.03			
A64	5.833	-1.03			
B1	5.63	-1.39			
B2	5.64	-1.39			
B3	6.71	-1.39			
B4	6.85	-1.39			
B5	6.88	-1.39			
B6	1.537	-1.03			
B7	1.664	-1.03			
B8	1.800	-1.39			
B9	2.254	-1.39			
B10	3.551	-1.03			
B11	3.338	-1.07			
B12	3.754	-1.03			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	Ø DIA	HOLE DIA	QTY
B13	5.860	-1.39	.006		
B14	5.936	-1.03			
B15	6.123	-1.03			
B16	6.772	-1.39			
B17	6.825	-1.03			
B18	6.961	-1.03			
B19	7.101	-1.03			
B20	7.101	-1.39			
B21	3.399	-1.22			
B22	3.480	-1.22			
C1	1.43	1.33			
C2	1.36	1.18			
C3	3.00	1.04			
C4	3.954	1.44			
C5	1.378	1.44			
C6	1.915	1.90			
C7	2.043	1.90			
C8	2.127	-1.22			
C9	3.448	-1.22			
C10	3.800	0.60			
C11	3.80	1.50			
C12	3.724	1.72			
C13	3.884	1.33			
C14	3.984	-1.22			
C15	4.070	0.60			
C16	4.543	1.72			
C17	4.626	0.77			
C18	4.717	2.21			
C19	4.788	2.76			
C20	4.98	-1.22			
C21	5.350	1.72			
C22	5.652	1.50			
C23	5.981	-1.22			
C24	5.744	1.87			
C25	6.282	1.44			
C26	6.708	1.44			
C27	7.360	0.40			
C28	7.622	1.18			
C29	7.526	1.33			
C30	3.174	1.76			
D1	1.540	1.306			
D2	1.646	1.15			
D3	1.979	1.306			
D4	5.681	1.306			
D5	6.014	1.15			
D6	6.120	1.306			
E1	1.295	-1.65			
E2	3.192	1.44			
E3	3.236	-1.65			
F1	1.305	1.200			
F2	7.355	2.00			
G1	1.36	1.308			
G2	7.796	1.308			
H1	1.398	1.316			
H2	6.094	1.316			
I1	1.897	-1.050			
I2	6.763	-1.050			
J1	2.530	1.62			
K1	3.583	1.066			
L1	1.195	1.275			
L2	6.463	1.275			
M1	4.007	1.402			
N1	4.357	1.039			
N2	5.104	1.039			
O1	1.020	1.035			
O2	7.660	1.035			



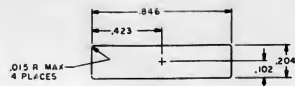
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
 2. MATERIAL: ALUMINUM ALLOY 2A B04 T5 PER QQ-M-3  
 3. FINISH: ANODIZE PER MIL-M-45202 TYPE 1, CLASS C  
 4. TOLERANCES: AS SHOWN IN CHART  
 5. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES  
 6. REMOVE ALL SHARP EDGES AND BREAK SHARP EDGES .005" DIA  
 7. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

1004198

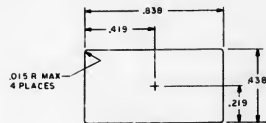
F



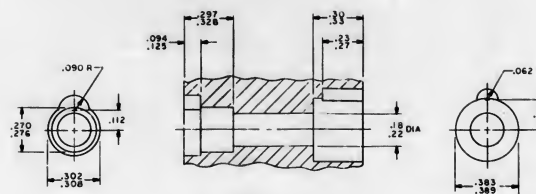




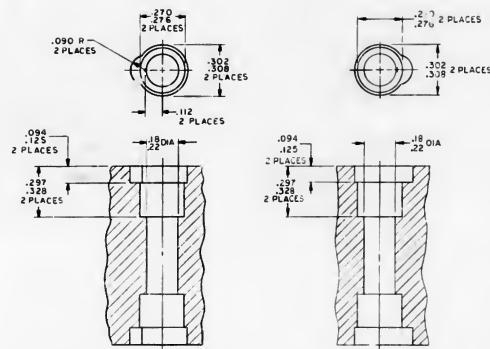
DETAIL A  
2" HOLE



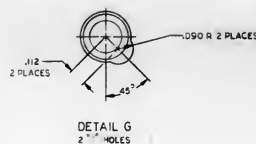
DETAIL B  
1" HOLE



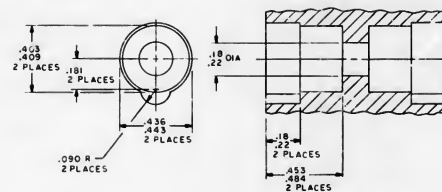
DETAIL D  
2" HOLE



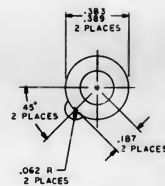
DETAIL C  
1" HOLE



DETAIL G  
2" HOLES



DETAIL E  
1" HOLE



DETAIL F  
2" HOLES

REV	DESCRIPTION	DATE	BY
A	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS
B	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS
C	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS
D	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS
E	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS
F	REVISED PER TORR 02/27/74	02/27/74	W. J. HARRIS

QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FILE NO.
LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON TEXAS HEADER HOUSING CONTROL MODULE A.G.C. POWER SUPPLY			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES FRACTIONS - DECIMALS - ANGLES .0005 - .0005 - 30° DO NOT SCALE DIMENSIONS MATERIAL - SEE NOTE 2		APPROVED BY: [Signature] DATE: 02/27/74 CHECKED BY: [Signature] DATE: 02/27/74 APPROVAL: [Signature]	
1005151	HEAT TREATMENT	HEAT APPROVAL: [Signature]	COSY CERT NO. 1
HEAT ASBY	USED ON	DATE: 02/27/74	DATE: 02/27/74
APPLICATION	SEE NOTE 2	NOT APPROVAL: [Signature]	DATE: 02/27/74

D  
C  
B  
A

1004198

A

2

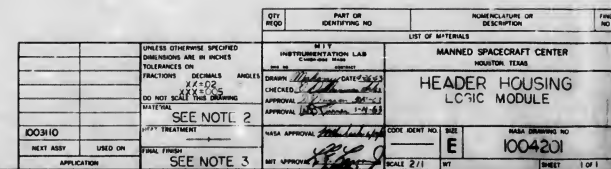
Technical drawing of a mechanical part, likely a bracket or plate, showing top and side views with dimensions and tolerances.

**Top View Dimensions:**

- Overall length: 9.725 ±.015
- Overall width: 1.545 ±.005
- Left side features:
  - Two .037 R-2 PLACES at the top left corner.
  - Bottom left corner: .006 MAX, .258, .254, .302, .296, .030 ±.005.
  - Along the bottom edge: .187 TYP, .187 TYP, .093 TYP, .093, .37.
- Internal features:
  - Along the top edge: .030-.065 R TYP 8 PLACES, R TYP.
  - Along the bottom edge: .053 ±.005, .055 ±.005.

**Side View Dimensions:**

- Overall height: 1.725 ±.021
- Top edge: .344, .035, .005 ±.015 R TYP.
- Bottom edge: .010 ±.020 TYP BOTH ENDS.
- Internal features: .377, .375, .002, .295, .292.

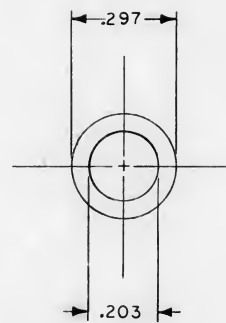
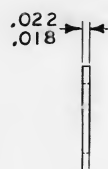




NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO LIABILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PROVIDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING THE ANY RIGHTS OR PATENTING TO INVENTION, OR AS SELLING ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

1004206  
B

REVISIONS 01749			
SYM	DESCRIPTION	DATE	APPROVAL
A	OBSOLETE PER TDRR 04746	11/1/63	JW
B	REACTIVATED PER TDRR 05710	10 JAN 64	RPK JW



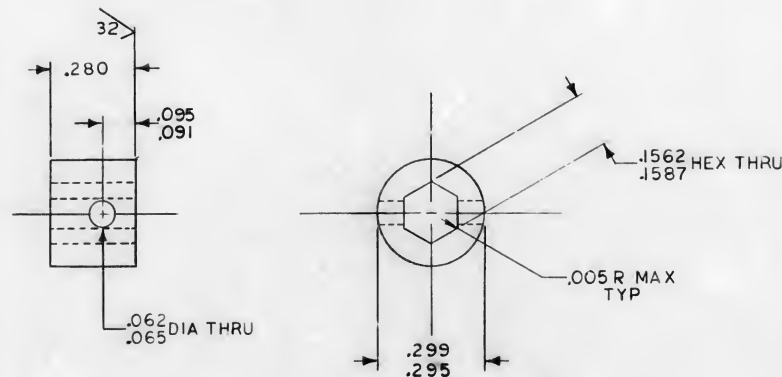
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
  2. MATERIAL: PHOSPHOR BRONZE, HALF HARD PER QQ-B-750 COMPOSITION A ALTERNATE MATERIAL: 303 CRES CLASS 303 COND. A PER QQ-S-763; PASSIVATE PER MIL-F-14072 FINISH: E300 TYPE I
  3. SURFACE QUALITY: 32/
  4. REMOVE ALL BURRS AND SHARP EDGES .005/.015

MASTER

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
	FRACTIONS DECIMALS ANGLES ± ±.005 ±
1007150	DO NOT SCALE THIS DRAWING
THRU	MATERIAL SEE NOTE 2
1007141	HEAT TREATMENT
NEXT ASSY USED ON	FINAL FINISH
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>J. N. Galt</i> DATE 5/9/63 CHECKED <i>C. J. Galt</i> 12 JUN 63 APPROVAL <i>J. N. Galt</i> 26 JUN 63 APPROVAL <i>J. N. Galt</i> 6/1/63		WASHER, THRUST	
NASA APPROVAL <i>W. J. R. R. R.</i> 6-26-63 MIT APPROVAL <i>W. J. R. R. R.</i> 6/26/63		CODE IDENT NO. SIZE C	NASA DRAWING NO. 1004206
SCALE 4/1		WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSIONS, ERRORS, OR IN ANY WAY SUPPLIED THE SAME DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE DEEMED BY APPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR SERVING AS ANY BASIS OR FORFEITURE TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED HEREIN.

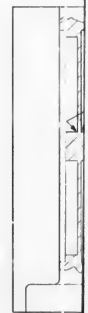


# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 416CRES PER QQ-S-763 CONDITION A
3. HEAT TREAT TO ROCKWELL C35-C40
4. SURFACE QUALITY: 125/UNLESS OTHERWISE SPECIFIED
5. REMOVE ALL BURRS AND SHARP EDGES .005/.015
6. FINISH: PASSIVATE PER MIL-F-14072 E300

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±.005	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE 2		
HEAT TREATMENT		
SEE NOTE 3		
FINAL FINISH		
SEE NOTE 6		
NEXT ASSY	USED ON	APPLICATION

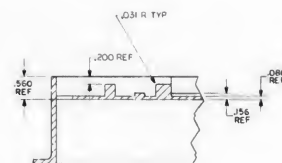
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. CONTRACT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS. NO. _____ DRAWN <i>F. W. White</i> DATE <i>5/9/63</i> CHECKED <i>W. S. Jackson</i> DATE <i>17 JUN 63</i> APPROVAL <i>W. S. Jackson</i> DATE <i>26 JUN 63</i> APPROVAL <i>W. S. Jackson</i> DATE <i>26 JUN 63</i>		DRIVE CYLINDER, EJECTION SCREW	
NASA APPROVAL <i>W. S. Jackson</i> DATE <i>16-26-63</i> MIT APPROVAL <i>W. S. Jackson</i> DATE <i>26 JUN 63</i>		CODE IDENT NO. _____ SIZE <b>C</b>	NASA DRAWING NO. <b>1004207</b>
SCALE 4/1		WT	SHEET   OF



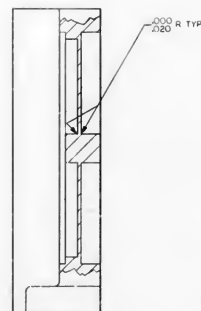
- NOTES-
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MAKE FROM NASA DWG 1004150
  3. REMOVE BURRS AND BREAK SHARP EDGES .005-.015
  4. UNLESS OTHERWISE SPECIFIED, FINISH 125
  5. ALL RADI AND FILLETS TO BE .125 UNLESS OTHERWISE SPECIFIED
  6. CAST FIND NO. 1 & NO 2 WITH MIL-P-8985 WET ZINC CHROMATE PRIMER
  7. INCAT FIND NO. 2 / NO100212



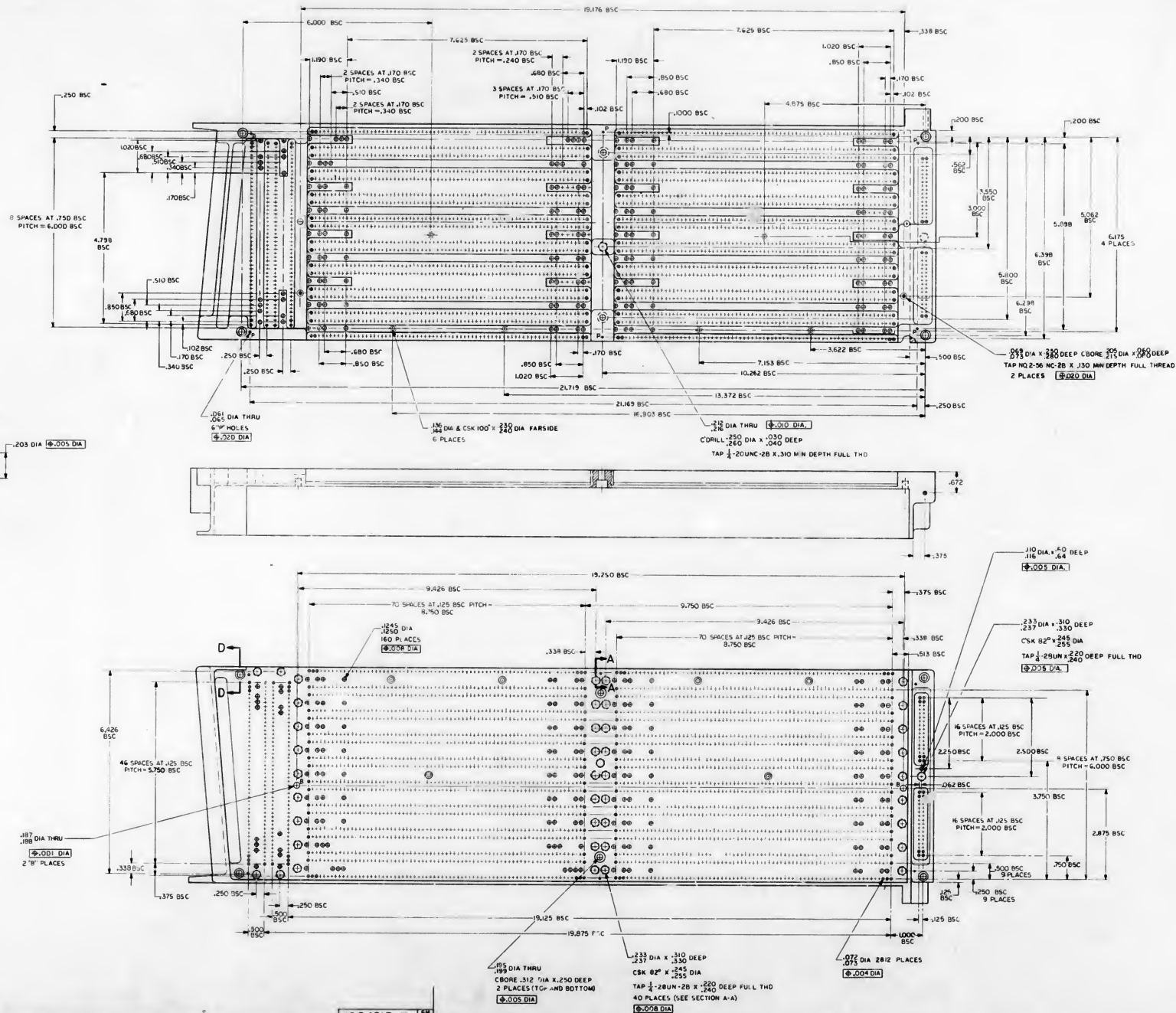
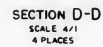
A	REVISED PER TORR	3/2/10	10/1/10
B	REVISED PER TORR	3/2/10	10/1/10
C	REVISED PER TORR	3/2/10	10/1/10
D	REVISED PER TORR	3/2/10	10/1/10
E	REVISED PER TORR 05/12	3/2/10	10/1/10
F	REVISED PER TORR	3/2/10	10/1/10
G	REVISED PER TORR 07/30/2	3/2/10	10/1/10
H	REVISED PER TORR 08/01/8	3/2/10	10/1/10



SECTION B-6



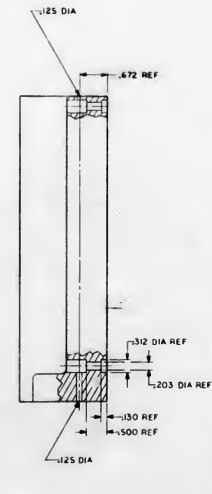
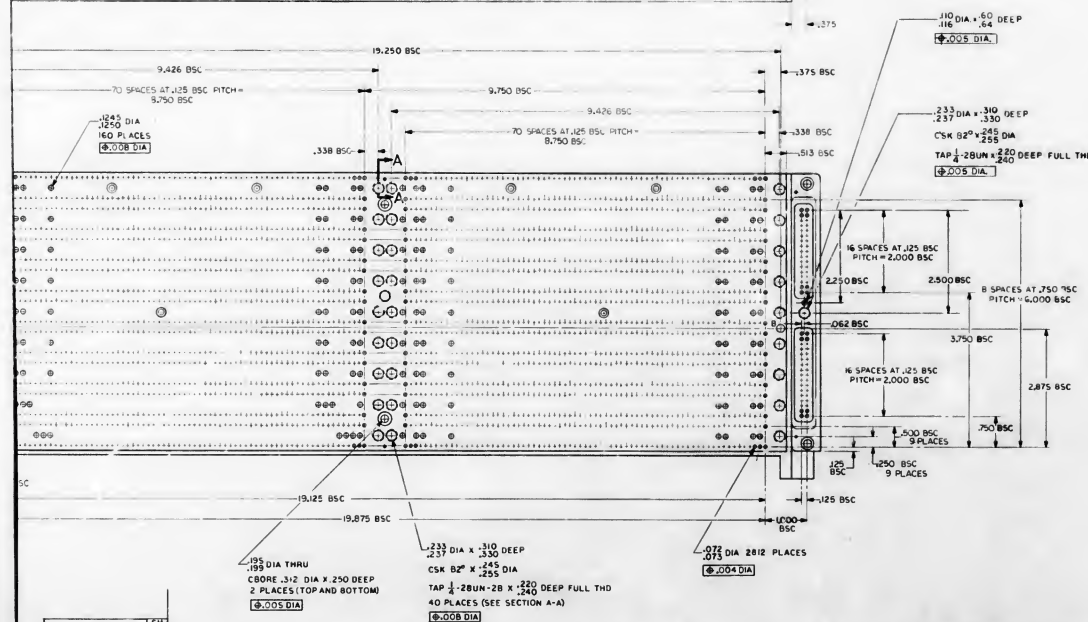
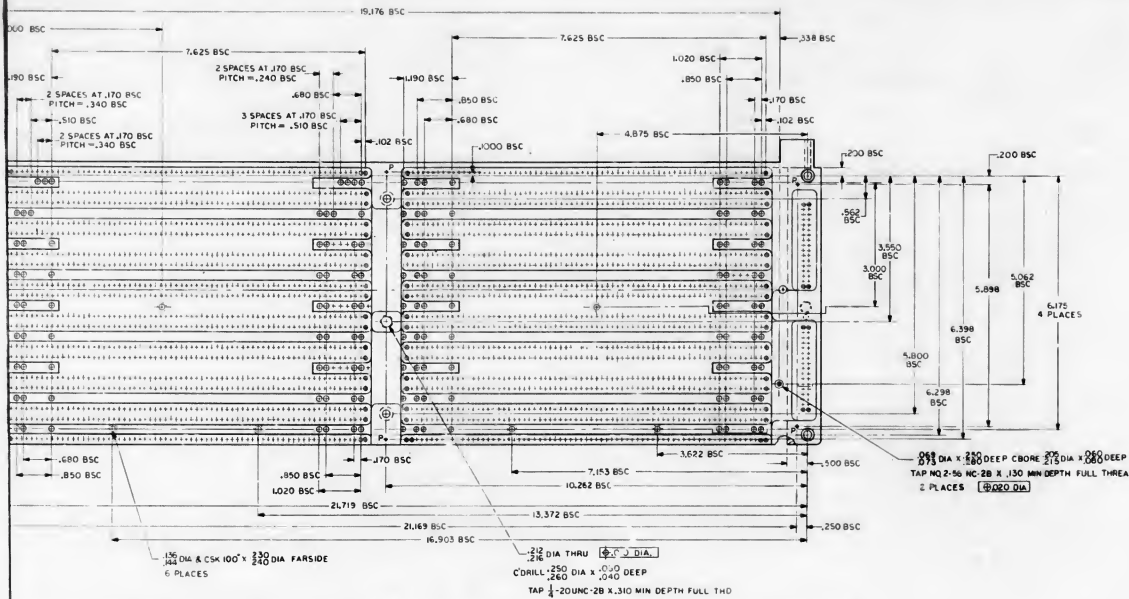
1003/26 NEXT AFFY.    URGED ON APPLICATION    →	LINE 010705W SPHERED OTHERS WERE IN HINDS TOLERANCE IN FRACIOUS DECIMAL    INCHES → 1.005 DO NOT SCALE THIS INCHES MATERIAL SEE NOTE 2	CITY HYDROGRAPHIC TIDE LANE OWNER: <i>John J. O'Connell</i> ADDRESS: <i>1005 1st St</i> CITY: <i>San Francisco</i> STATE: <i>CA</i> ZIP: <i>94102</i> NAME: <i>William J. O'Connell</i> ADDRESS: <i>1005 1st St</i> CITY: <i>San Francisco</i> STATE: <i>CA</i> ZIP: <i>94102</i>	MAPED SPECIFICATION CENTER HOUSTON, TEXAS TRAY A LEFT HAND CODE IDENT NO    BOX    NAME FINDING NO 1004213 SCALE 1/1    SHEET 1 OF 1
---	---	--	--



1004213 H	SH 20
-----------	----------

SH  
202

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR	7-22-02	7/22/02
B	REVISED PER TORR	7-22-02	7/22/02
C	REVISED PER TORR	7-22-02	7/22/02
D	REVISED PER TORR	7-22-02	7/22/02
E	REVISED PER TORR	05/12	5/12/02
F	REVISED PER TORR	5-12-02	5/12/02
G	REVISED PER TORR	07/502	7/502
H	REVISED PER TORR	8-20-02	8/20/02

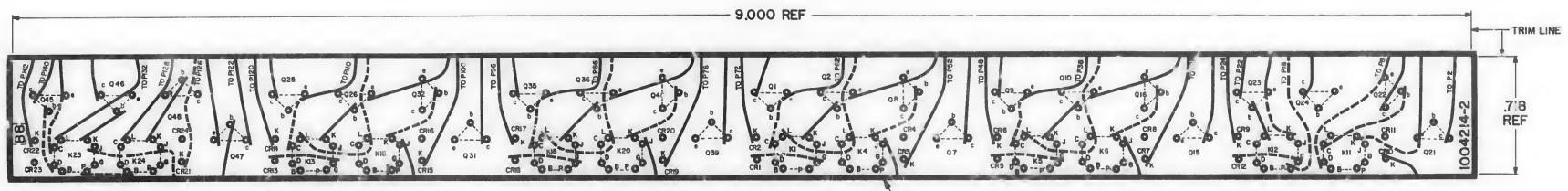


EXT 0000	EXT EXTENT: NO	NUMERICAL OR DESCRIPTION	EXT EXTENT: NO
CHALKS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES OF WHICH FRACTIONS DECIMALS DO NOT EXCEED 0.005 MATERIAL SPEC. NO. Y2		PART INSTRUMENT/FURNITURE LAB NO. 1 CHECKED BY <i>W. J. [illegible]</i> APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>	
USED ON NEXT DAY APPLICATION		NAMED SPACECRAFT CENTER HOUSTON, TEXAS TRAY A LEFT RIGHT NADA DRAWING NO. 1004213 SCALE 1/1" = 1"	
USED ON NEXT DAY APPLICATION		CODE IDENT NO. J 1004213 SHEET 2 OF 2	



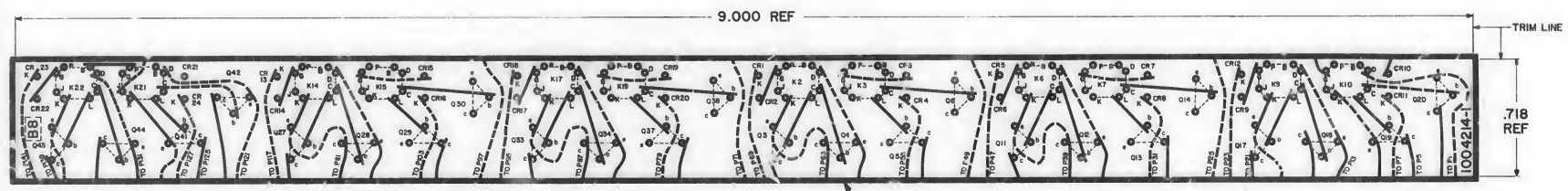
THIS DRAWING IS THE PROPERTY OF NASA. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM NASA. THE USER SHALL INDEMNIFY AND HOLD HARMLESS NASA FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEY'S FEES, WHICH MAY BE ASSERTED AGAINST NASA BY ANY THIRD PARTY AS A RESULT OF THE USER'S USE OF THIS DRAWING.

REV	DESCRIPTION	DATE	APPROVAL
1	REVISED PER TORR	3/1/63	W. J. ...



2

2.000  
PHOTO  
REF  
DIM.

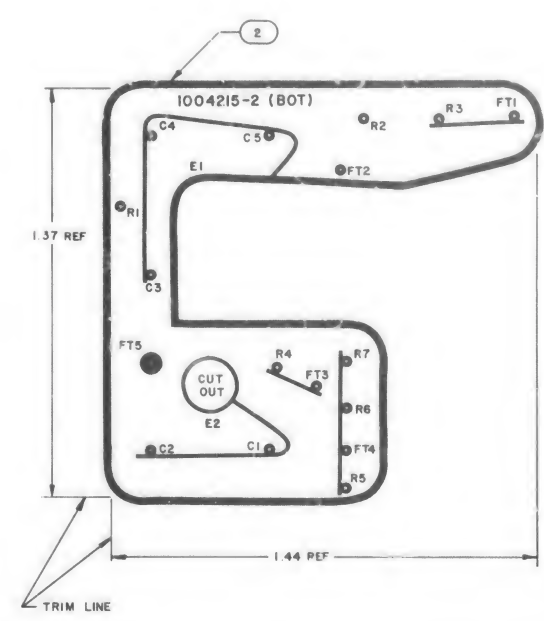
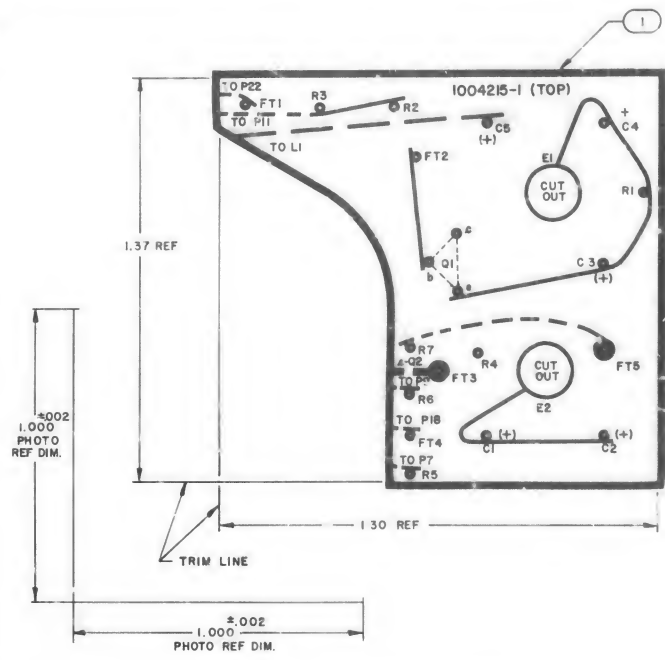


1

- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
  3. CUT TO WITHIN .010 OF TRIMLINE
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  5. MATERIAL: FILM 000008 THICK PER L-7-340, TYP. 1B, CLASS 2, STYLE 1A
  6. .045 / .050 DIA PUNCH ALL HOLES

1003152		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS AND 15 DO NOT SCALE THIS DRAWING DATE: 3/1/63 DRAWN: J. J. ... CHECKED: J. J. ... APPROVED: J. J. ... NASA APPROVAL: J. J. ... NEXT ASSY: ... USED ON: ... APPLICATION: ...		M T Y INSTRUMENTATION LAB DATE: 3/1/63 CHECKED: J. J. ... APPROVED: J. J. ... NASA APPROVAL: J. J. ... M T Y APPROVAL: J. J. ...		LIST OF MATERIALS MANNED SPACECRAFT CENTER INSULATOR PHOTOGRAPHIC MASTER CURRENT SWITCH MODULE B8 SCALE: 4/1 WT: ... SHEET: 1 OF 1	
---------	--	--	--	--	--	---	--

NOTES: 1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.  
2. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
3. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
4. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
5. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
6. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
7. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.  
8. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.



# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THK PER L-F-340, TYPE IB, CL 2, STYLE 1A
6. BROKEN LINES DENOTE SLEEVING
7.  $\bullet$  .045/.055 DIA PUNCH
8.  $\bullet$  .065/.075 DIA PUNCH

REV	SHOWS	DATE	APPROVAL
A	CHANGED PER TDRR 02803	2/5/68	DR
B	CHANGED PER TDRR 03811	2/10/68	DR
C	CHANGED PER TDRR 07345 DR CHK OUM APPD	4/11/68	DR
D	CHANGED PER TDR 13994 DR CHK R.H.S. DM	11/1/68	DR

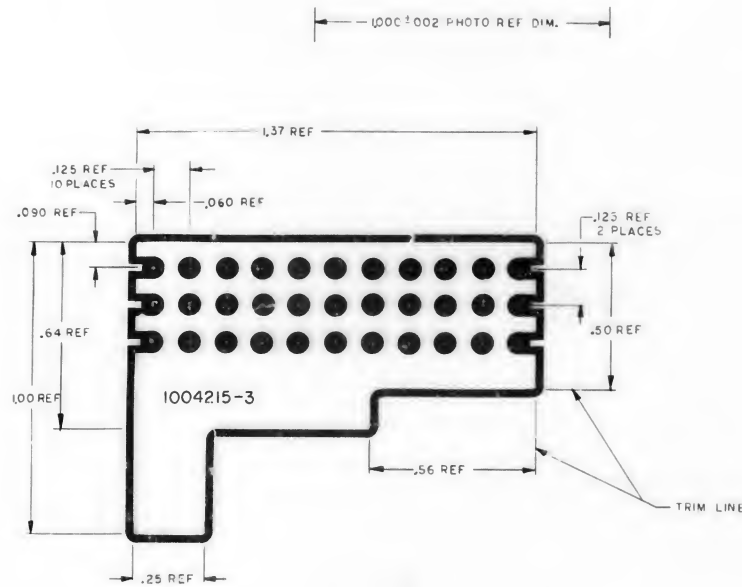
1	1004215-3	INSULATOR	3
1	1004215-2	INSULATOR, BOTTOM	2
1	1004215-1	INSULATOR, TOP	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		MIT INSTRUMENTATION LAB CAMBRIDGE MA 02139	
DRAWN BY DATE 2/5/68 CHECKED BY DATE 2/10/68 APPROVAL BY DATE 2/10/68		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
MATERIAL SEE NOTE 5		INSULATOR PHOTOGRAPHIC MASTER POWER SWITCH MODULE	
HEAT TREATMENT		CAGE IDENT NO. SIZE NASA DRAWING NO. D 1004215	
NEXT ASSY USED ON		MIT APPROVAL BY DATE 11/1/68 SCALE 5/1 WT	
APPLICATION		SHEET 1 OF 2	

NOTICE - WHEN GOVERNMENT DRAWINGS ARE PREPARED BY CONTRACTORS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DIMENSIONS AND TOLERANCES SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DIMENSIONS AND TOLERANCES SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DIMENSIONS AND TOLERANCES SPECIFIED.

1004215 D

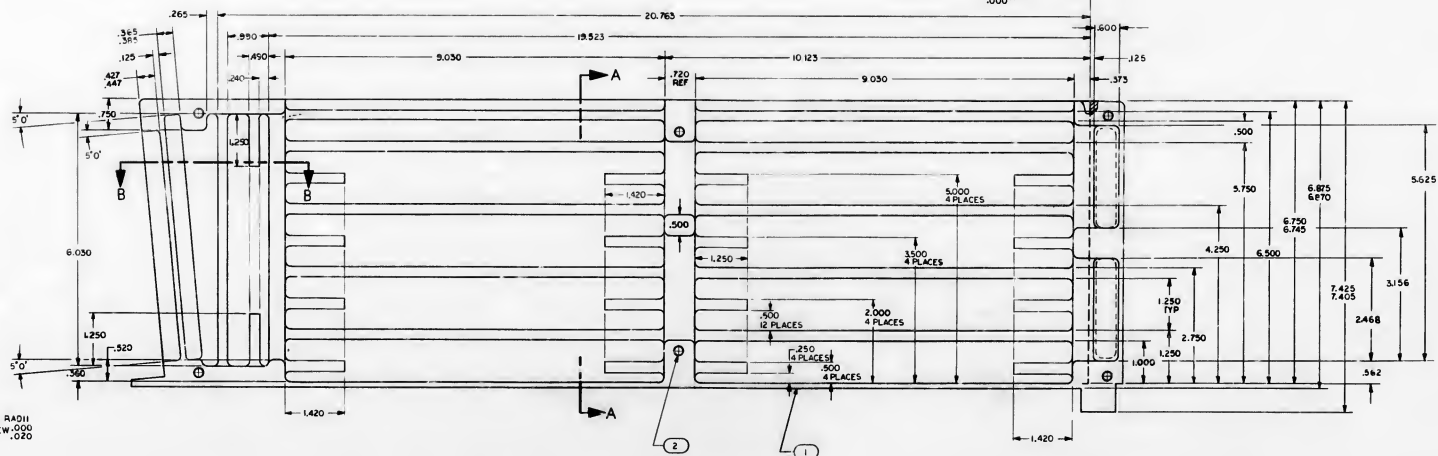
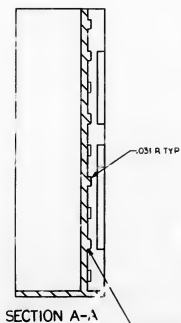
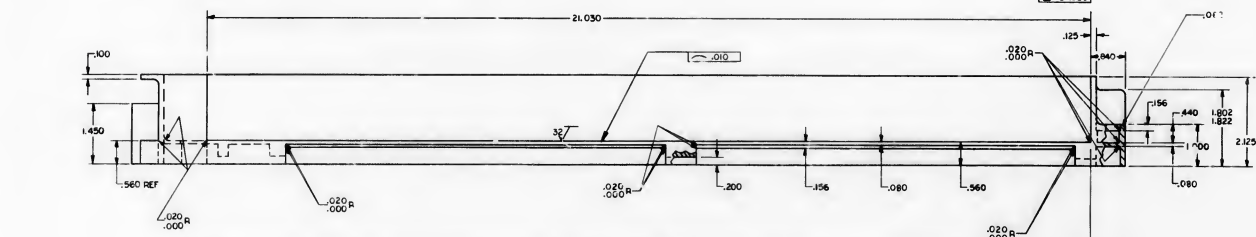
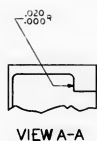
REVISIONS		
BY	DESCRIPTION	DATE
C	THIS SHEET ADDED PER TDR 07345	3/1/64
D	CHANGED PER TDR 13994 OR 07345	4/16/64



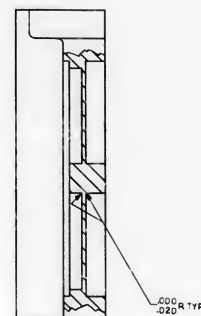
© THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MTI INSTRUMENTATION LAB Cincinnati, Ohio		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>[Signature]</i> DATE 11-1-63		INSULATOR PHOTOGRAPHIC MASTER POWER SWITCH MODULE	
CHECKED <i>[Signature]</i> 12-1-63		NABA IDENT NO. 1004215	
APPROVAL <i>[Signature]</i> 12-1-63		NABA DRAWING NO.	
NABA APPROVAL <i>[Signature]</i> 12-1-63		CODE IDENT NO. D	SIZE 1004215
MTI APPROVAL <i>[Signature]</i> 12-1-63		SCALE 3/1	SHEET 2 OF 2

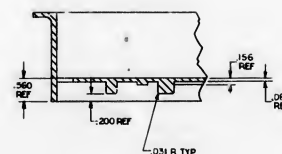




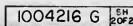
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MAKE FROM NASA DWG 1004150
  3. REMOVE BURRS AND BREAK SHARP EDGES .005 - .015 UNLESS OTHERWISE SPECIFIED FINISH  $\sqrt{16}$
  4. ALL RADI AND FILLETS TO BE .125 UNLESS OTHERWISE SPECIFIED
  5. COAT FINO NO.1 AND FINO NO.2 WITH MIL-P-8885 WET ZINC CHROMATE PRIMER
  6. INSTALL FINO NO.2 / NO1002121



SECTION B-B



6		NA51399 OBL		INSET, THREE-SEAL, SELF LOCKING			
1		1DD4216		TRAY A RIGHT HAND			
QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE, OR DESCRIPTION		FR IN	
LIST OF MATERIALS							
CONTRACTOR INTERMOUNTAIN LAB 1000 E. 1000 S. ANTI COLLISION ORDERED <i>10/24/68</i> APPROVAL <i>10/24/68</i> APPROVAL <i>10/24/68</i>				MANAGED SPACECRAFT CENTER HOUSTON, TEXAS  TRAY A RIGHT HAND			
NASA APPROVAL <i>10/24/68</i> 5-3A-67				COOR IDENT NO J		NASA ORIGINATING NO 1004216	
MFG APPROVAL <i>10/24/68</i>				TOTAL 1/1 WT		INSET 1 OF 1	





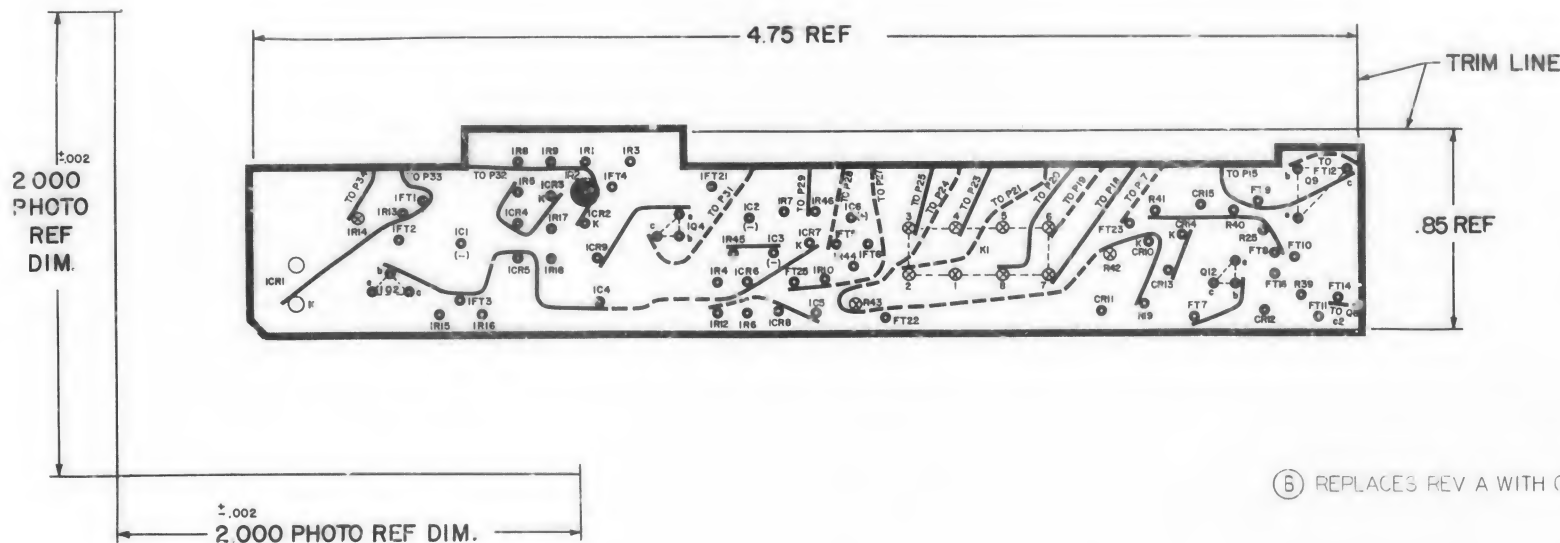












REVISIONS			
BY	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TORR 0401	10/1/85	WHL
C	REVISED PER TORR 0442	10-6-85	WHL
D	REVISED PER TORR 07264 DRAWING CHKD APPD	5/1/86	WHL

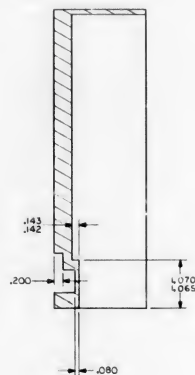


## NOTES

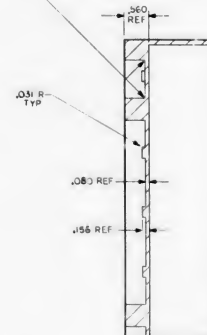
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THK PER L-F-340, TYPE IB, CL 2, STYLE IA
6.  .035/.045 DIA PUNCH
7. BROKEN LINES DENOTE SLEEVEING
8.  .047/.057 DIA PUNCH
9.  .057/.067 DIA PUNCH
10.  .111/.121 DIA PUNCH

QTY REQ		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN	
				LIST OF MATERIALS			
MIT INSTRUMENTATION LAB Chemistry Team				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		Dwg OR		CONTACT			
TOLERANCES ON FRACTIONS DECIMALS ANGLES		DRAWN <i>[Signature]</i> DATE <i>11/1/68</i>		CHECKED <i>[Signature]</i> DATE <i>11/1/68</i>			
DO NOT SCALE THIS DRAWING		APPROVAL <i>[Signature]</i>		INSULATOR PHOTOGRAPHIC MASTER			
WATER		APPROVAL <i>[Signature]</i>		CONTROL MODULE			
SEE NOTE 5		NASA APPROVAL <i>[Signature]</i>		CROSS IDENT NO		NASA DRAWING NO	
1003150		HEAT TREATMENT		SIZE		D 1004219	
NEXT ASSY USED ON		FINAL FINISH		MIT APPROVAL <i>[Signature]</i>		SCALE 4/1	
APPLICATION				WT		SHEET 1 OF 4	

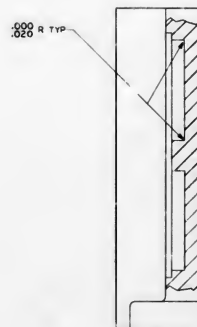




SECTION C-C

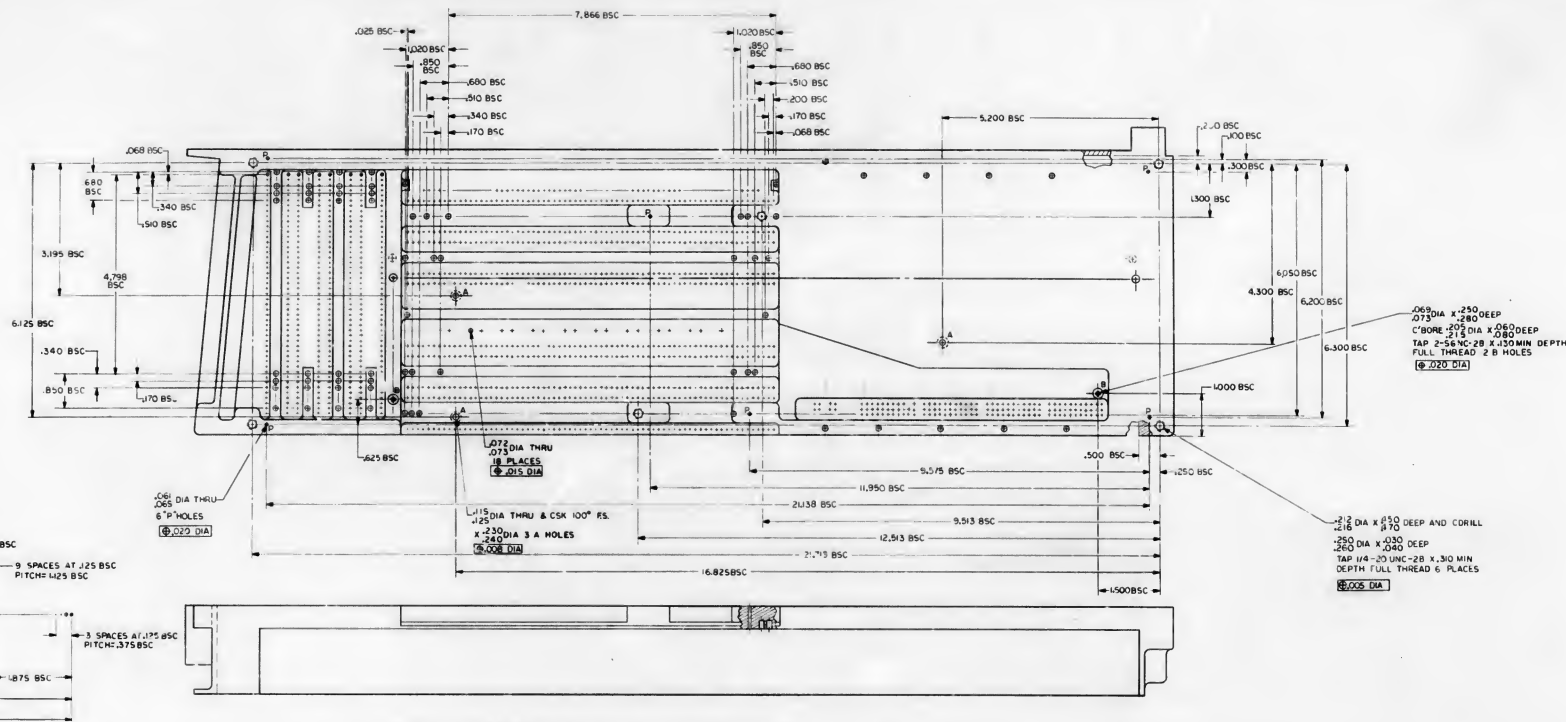


SECTION B-B

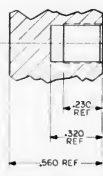


6	2453954A-081	INSERT THREADED SELF LOCKING	2
1	10042200	TRAY B - LEFT HAND	1
QTY	PART NO	NOMENCLATURE OR DESCRIPTION	FIN NO
ISSUING OFFICE OF ORIGIN		LIST OF MATERIAL	
BY INSTRUMENTATION L/R COMMANDER DATE 24 JUL 65 CHECKED APPROVED: <i>[Signature]</i> APPROVAL: <i>[Signature]</i> NAME APPROVAL: <i>[Signature]</i> SET APPROVAL: <i>[Signature]</i>			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS  TRAY B LEFT HAND			
FOOT REENT NO		SIZE	NAME DESIGN NO
J		J	10042200
SCALE 1/1		SHEET 1 OF 2	

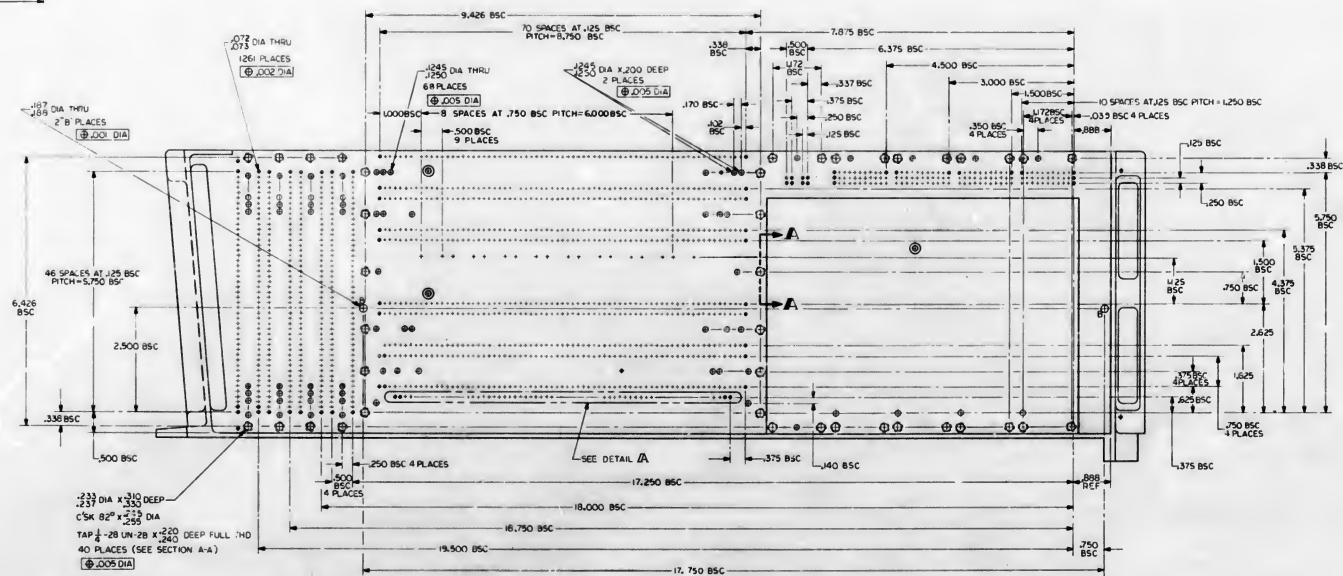




DETAIL A



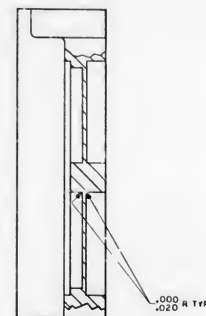
SECTION A-A  
SCALE 4/1  
40 PLACES



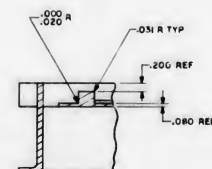


3

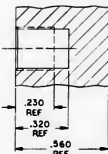




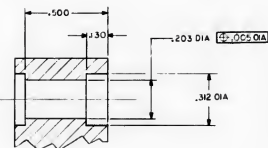
SECTION B-B



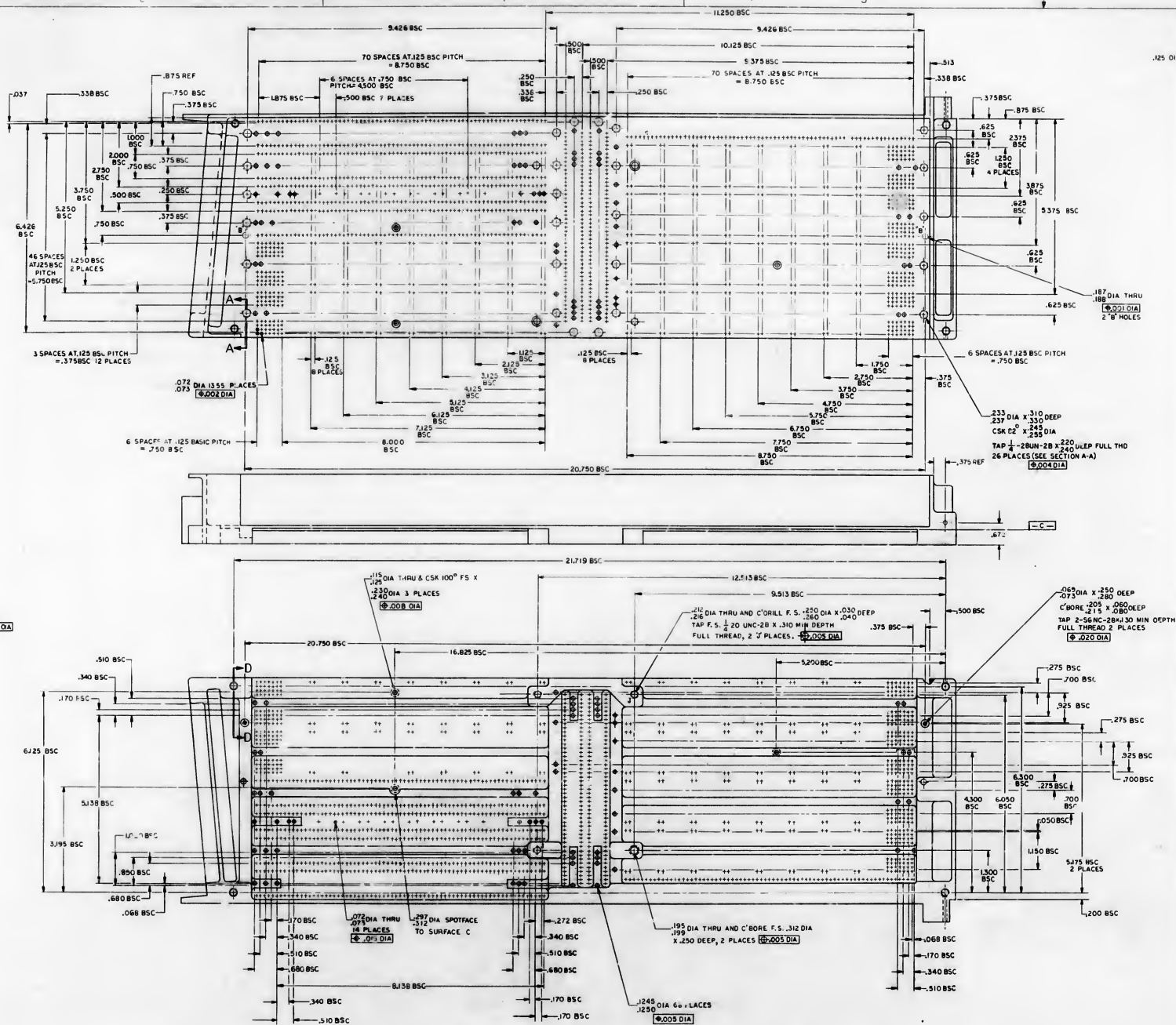
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1										2										3										4										5										6										7										8										9										10										11										12										13										14										15										16										17										18										19										20										21										22										23										24										25										26										27										28										29										30										31										32										33										34										35										36										37										38										39										40										41										42										43										44										45										46										47										48										49										50										51										52										53										54										55										56										57										58										59										60										61										62										63										64										65										66										67										68										69										70										71										72										73										74										75										76										77										78										79										80										81										82										83										84										85										86										87										88										89										90										91										92										93										94										95										96										97										98										99										100									
1										2										3										4										5										6										7										8										9										10										11										12										13										14										15										16										17										18										19										20										21										22										23										24										25										26										27										28										29										30										31										32										33										34										35										36										37										38										39										40										41										42										43										44										45										46										47										48										49										50										51										52										53										54										55										56										57										58										59										60										61										62										63										64										65										66										67										68										69										70										71										72										73										74										75										76										77										78										79										80										81										82										83										84										85										86										87										88										89										90										91										92										93										94										95										96										97										98										99										100									
1										2										3										4										5										6										7										8										9										10										11										12										13										14										15										16										17										18										19										20										21										22										23										24										25										26										27										28										29										30										31										32										33										34										35										36										37										38										39										40										41										42										43										44										45										46										47										48										49										50										51										52										53										54										55										56										57										58										59										60										61										62										63										64										65										66										67										68										69										70										71										72										73										74										75																																																																																																																																																																																																																																																																			

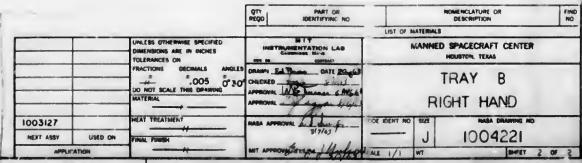
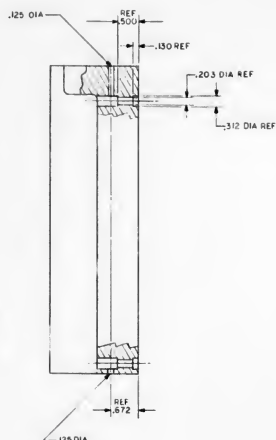


SECTION A-A  
SCALE: 4/1  
26 PLACES



SECTION D-D  
SCALE: 4/1  
4 PLACES

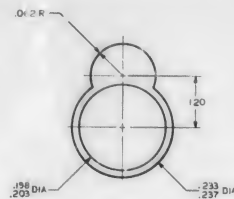






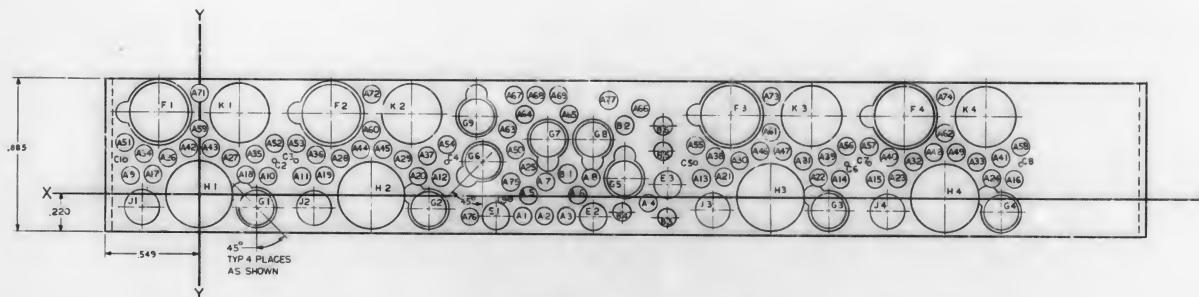
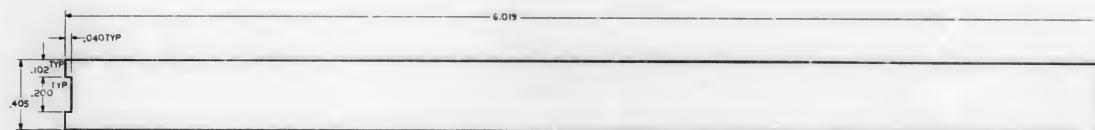
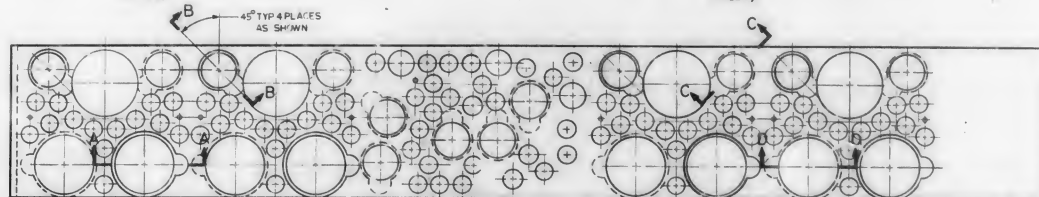


REV	DESCRIPTION	DATE	AMOUNT
A	REVISED PER TORR	02/04	0.00
B	CHANGE PER TORR	03/06	0.00
C	REVISED PER TORR	03/14	0.00
D	REVISED PER TORR	03/28	0.00



DETAIL A  
SCALE 10/1

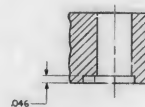
DETAIL B  
SCALE 10/1



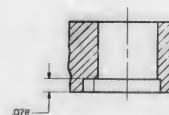
SECTION A-A  
SCALE 4/1



SECTION B-B  
ROTATED 60° 45°  
SCALE 4/



SECTION C-C  
ROTATED CW 45°  
SCALE 4/1

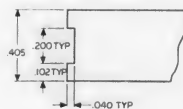
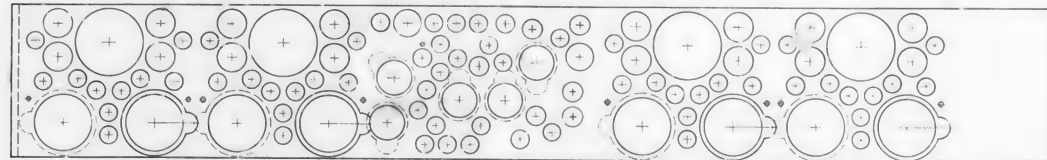


SECTION D-D  
SCALE 4/1

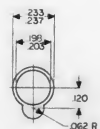
[illegible]

HOLE IDENT	BASIC X DIM.	BASIC Y DIM.	HOLE DIA.	Ø DIA.	QTY
A1	2.289	1.07			
A2	2.416				
A3	2.544				
A4	3.015	0.068			
A5	0.000	0.000			
A6	845				
A7	1.000				
A8	1.846				
A9	3.325				
A10	4.171				
A11	4.325				
A12	5.71				
A13	2.325	0.02			
A14	2.604	0.06			
A15	2.424	0.02			
A16	2.685	0.15			
A17	2.325	0.13			
A18	2.43	0.23			
A19	603				
A20	1.443				
A21	1.603				
A22	3.568				
A23	3.128				
A24	4.568				
A25	4.928				
A26	0.000	0.39			
A27	2.98				
A28	1.048				
A29	1.258				
A30	3.375				
A31	4.123				
A32	4.323				
A33	5.123				
A34	2.647	0.27			
A35	3.52	0.32			
A36	4.94				
A37	1.352				
A38	1.494				
A39	3.677				
A40	3.819				
A41	4.677				
A42	4.819				
A43	2.200	0.396			
A44	4.23	0.48			
A45	1.423				
A46	3.748				
A47	4.748				
A48	2.301	0.48			
A49	2.558				
A50	2.971	0.15			
A51	4.23	0.47			
A52	1.423				
A53	3.748				
A54	4.748				
A55	2.236	0.92			
A56	2.46				
A57	2.495				
A58	2.485				
A59	2.220	0.22			
A60	1.583	0.07			
A61	2.783	0.50			
B1	1.129	0.098			
B2	7.17				
B3	1.129				
B4	1.717				
B5	3.454				
B6	4.042				
B7	4.454				
B8	5.042				
B9	1.129	0.098			
B10	7.17				
B11	1.129				
B12	1.717				
B13	3.454				
B14	4.042				
B15	4.454				
B16	5.042				
C1	0.037	0.340			
C2	0.883				
C3	0.963				
C4	1.883				
C5	3.288				
C6	4.208				
C7	4.298				
C8	5.208				
C9	2.220	0.000			
D1	1.161	0.79			
D2	6.95				
D3	1.161				
D4	1.685				
D5	3.486				
D6	4.010				
D7	4.486				
D8	5.010				

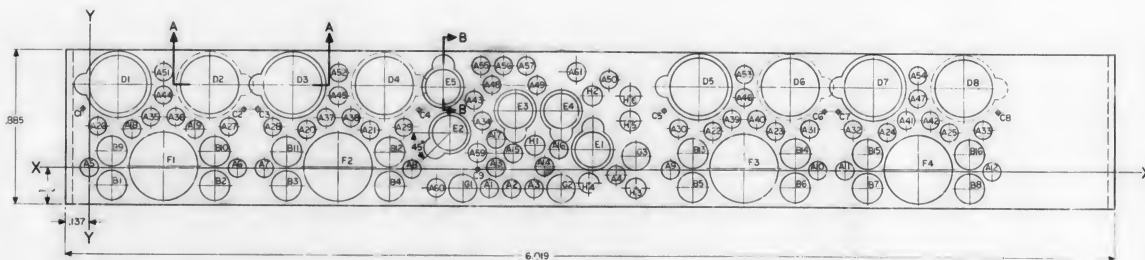
HOLE IDENT	BASIC X DIM.	BASIC Y DIM.	HOLE DIA.	Ø DIA.	QTY
E1	2.880	0.15			
E2	2.060	0.07			
E3	2.434	0.36			
E4	2.696				
E5	2.000	0.469			
F1	4.23	0.10			
F2	1.423				
F3	3.748				
F4	4.748				
G1	2.136	0.107			
G2	2.699				
G3	3.127	0.79			
H1	2.548	0.39			
H2	2.675	0.22			
H3	3.127	0.107			
H4	2.855	0.075			
H5	3.095	0.277			
H6	3.095	0.422			



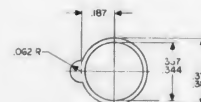
SECTION B-B  
5 E HOLES



DETAIL B  
5 E HOLES



SECTION A-A  
8 D HOLES



DETAIL A  
8 D HOLES

- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-70327
  2. MATL: PLASTIC, CLEAR ACRYL PER MIL-P-8184, FINISH 8 ALT MIL-P-5425B FINISH 8
  3. TRUE POSITION AS SHOWN IN CHART
  4. BREAK ALL SHARP EDGES

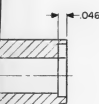
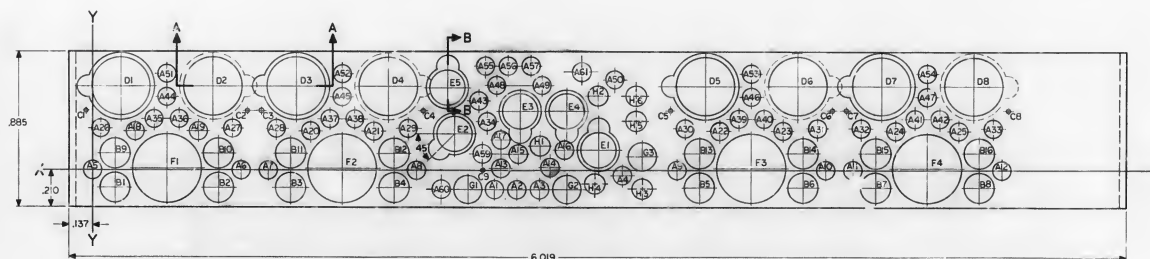
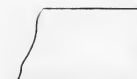
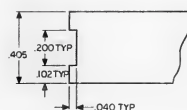
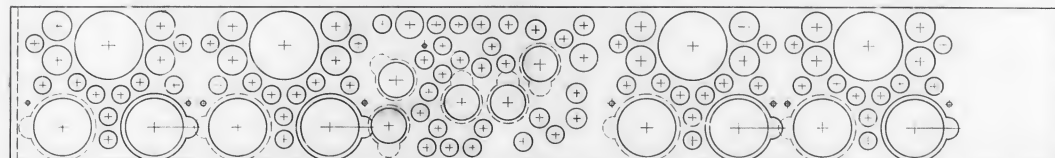
1004223

C

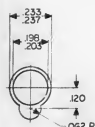
UNLESS OTHERWISE SPECIFIED	ALL DIMENSIONS ARE IN INCHES
FRACTIONS	DECIMALS
1/8"	0.125"
1/16"	0.0625"
1/32"	0.03125"
1/64"	0.015625"
1/128"	0.0078125"
1/256"	0.00390625"
1/512"	0.001953125"
1/1024"	0.0009765625"
1/2048"	0.00048828125"
1/4096"	0.000244140625"
1/8192"	0.0001220703125"
1/16384"	0.00006103515625"
1/32768"	0.000030517578125"
1/65536"	0.0000152587890625"
1/131072"	0.00000762939453125"
1/262144"	0.000003814697265625"
1/524288"	0.0000019073486328125"
1/1048576"	0.00000095367431640625"
1/2097152"	0.000000476837158203125"
1/4194304"	0.0000002384185791015625"
1/8388608"	0.00000011920928955078125"
1/16777216"	0.000000059604644775390625"
1/33554432"	0.0000000298023223876953125"
1/67108864"	0.00000001490116119384765625"
1/134217728"	0.000000007450580596923828125"
1/268435456"	0.0000000037252902984619140625"
1/536870912"	0.00000000186264514923095703125"
1/1073741824"	0.000000000931322574615478515625"
1/2147483648"	0.0000000004656612873077392578125"
1/4294967296"	0.00000000023283064365386962890625"
1/8589934592"	0.000000000116415321826934814453125"
1/17179869184"	0.0000000000582076609134674072265625"
1/34359738368"	0.00000000002910383045673370361328125"
1/68719476736"	0.000000000014551915228366851806640625"
1/137438953472"	0.0000000000072759576141834259033203125"
1/274877906944"	0.00000000000363797880709171295166015625"
1/549755813888"	0.000000000001818989403545856475830078125"
1/1099511627776"	0.0000000000009094947017729282379150390625"
1/2199023255552"	0.00000000000045474735088646411895751953125"
1/4398046511104"	0.000000000000227373675443232059478759765625"
1/8796093022208"	0.0000000000001136868377216160297393798828125"
1/17592186044416"	0.00000000000005684341886080801486968994140625"
1/35184372088832"	0.000000000000028421709430404007434844970703125"
1/70368744177664"	0.0000000000000142108547152020037174224853515625"
1/140737488355328"	0.00000000000000710542735760100185871124271728125"
1/281474976710656"	0.0000000000000035527136788005009293556211369140625"
1/562949953421312"	0.000000000000001776356839400250046477780568571875"
1/1125899906842624"	0.000000000000000888178419700125023238890284289375"
1/2251799813685248"	0.0000000000000004440892098500625116194451421446875"
1/4503599627370496"	0.00000000000000022204460492503125559722257107234375"
1/9007199254740992"	0.000000000000000111022302462515627798611285536171875"
1/18014398509481984"	0.000000000000000055511151231257813899305642768089375"
1/36028797018963968"	0.0000000000000000277555756156289069496528213840446875"
1/72057594037927936"	0.00000000000000001387778780781445347482641069202234375"
1/144115188075855872"	0.000000000000000006938893903907226737413205346011171875"
1/288230376151711744"	0.000000000000000003469446951953613368706602673005589375"
1/576460752303423488"	0.0000000000000000017347234759768066843533013365027946875"
1/1152921504606846976"	0.00000000000000000086736173798840334221766566825139734375"
1/2305843009213693952"	0.000000000000000000433680868994201671108832834125698671875"
1/4611686018427387904"	0.0000000000000000002168404344971008355544164170628493359375"
1/9223372036854775808"	0.00000000000000000010842021724855041777720820853142471796875"
1/18446744073709551616"	0.0000000000000000000542101086242752088886041042657123589375"
1/36893488147419103232"	0.0000000000000000000271050543121376044443020521328561946875"
1/73786976294838206464"	0.00000000000000000001355252715606880222215102606642809734375"
1/147573952589676412928"	0.000000000000000000006776263578034401111075513033214048671875"
1/295147905179352825856"	0.000000000000000000003388131789017200555537756516607024339375"
1/590295810358705651712"	0.000000000000000000001694065894508600277768878258303512196875"
1/1180591620717411303424"	0.000000000000000000000847032947254300138884439129151756109375"
1/2361183241434822606848"	0.0000000000000000000004235164736271500694422195645758780546875"
1/4722366482869645213696"	0.00000000000000000000021175823681357500347211078228793902734375"
1/9444732965739290427392"	0.000000000000000000000105879118406787501736055391143969513671875"
1/18889465931478580854784"	0.000000000000000000000052939559203393750868027695571984756839375"
1/37778931862957161709568"	0.0000000000000000000000264697796016968754340138477859923784196875"
1/75557863725914323419136"	0.00000000000000000000001323488980084843771700692389299618920984375"
1/151115727451828646838272"	0.0000000000000000000000066174449004242188585034619464980946049375"
1/302231454903657293676544"	0.00000000000000000000000330872245021210942925173097324904730246875"
1/604462909807314587353088"	0.000000000000000000000001654361225106054714625865486624503651234375"
1/1208925819614629174706176"	0.0000000000000000000000008271806125530273573125327933312518256171875"
1/2417851639229258349412352"	0.0000000000000000000000004135903062765136786562663966656259128089375"
1/4835703278458516698824704"	0.00000000000000000000000020679515313825683932813319833281254640446875"
1/9671406556917033397649408"	0.000000000000000000000000103397576569128419664066599166406273202234375"
1/19342813113834066795298816"	0.000000000000000000000000051698788284564209832033299583203136111171875"
1/38685626227668133590597632"	0.00000000000000000000000002584939414228210491601664979160156805589375"
1/77371252455336267181195264"	0.000000000000000000000000012924697071141052458008324895800784027946875"
1/154742504910672534362390528"	0.0000000000000000000000000064623485355705262290041624479003920139734375"
1/309485009821345068724781056"	0.00000000000000000000000000323117426778526311450020812239501960156839375"
1/618970019642690137449562112"	0.000000000000000000000000001615587133892631572500104061197509800784196875"
1/1237940039285380274899124224"	0.00000000000000000000000000080779356694631586250005203059875049003920139734375"
1/2475880078570760549798248448"	0.000000



QTY
5
4
3
6



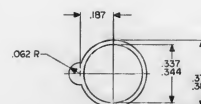
SECTION B-B  
5 E HOLES



DETAIL B  
5 E HOLES



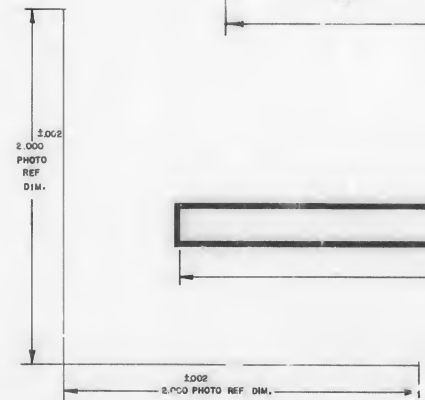
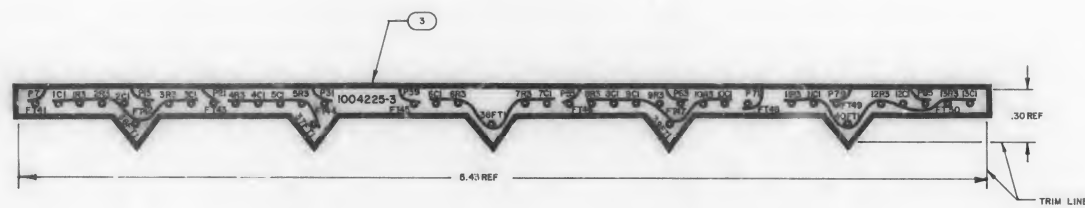
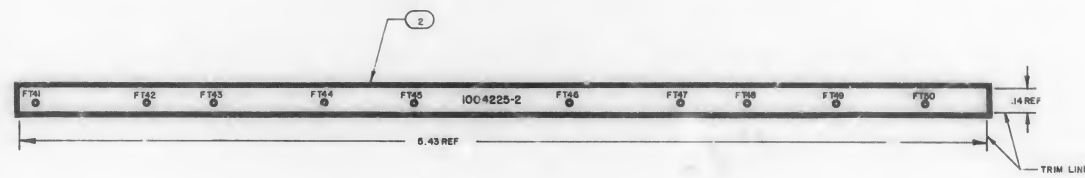
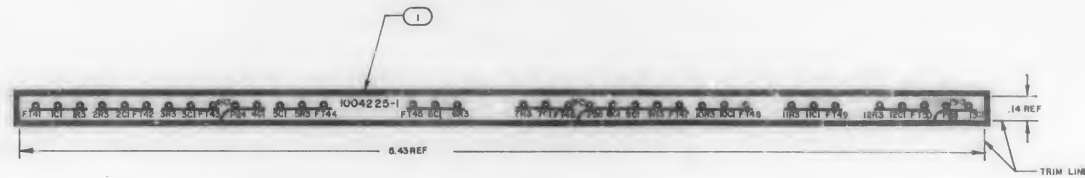
SECTION A-A  
8 D HOLES



DETAIL A  
8 D HOLES

QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
5	1004223	COMPONENT HOLDER	
LIST OF MATERIALS			
UNITED STATES GOVERNMENT INSTRUMENTATION LAB HOUSTON TEXAS DATE 2-28-73 DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature] MATERIAL: [Blank] SEE NOTE 2 HEAT TREATMENT: [Blank] FINISH: [Blank]			
CODE	QTY	NO	NO
J	5	1004223	
SCALE 4/1 SHEET 1 OF 1			

1		1004-224-2		INSULATOR		1	
2		1004224-1		INSULATOR		2	
QTY		PART OF		NOMEN. ALIQUOT OR		PART	
REQD		IDENTIFYING NO		DESCRIPTION		FACILITY	
				LIST OF MATERIALS			
Q1255 STOPPAGE DESCRIBED (DESCRIBE AREA IN WHICH TOLERANCES OR DIMENSIONS ARE EXCEEDED)				M17 INSTRUMENTATION LAB GRAVIMETRIC ANALYSIS ANALYST: <i>[Signature]</i> APPROVAL: <i>[Signature]</i> DATE: 12/19/68			
DO NOT SCALE THIS DRAWING JUSTIFY				MANHED SPACECRAFT CENTER HOUSTON TEXAS INSULATOR PHOTOGRAPHIC MASTER ROPE SENSE AMPLIFIER MODULE			
SEE NOTE 3 REE TELETYPE				MESA APPROVAL: <i>[Signature]</i> CODE IDENT NO: <b>E 1004224</b>			
100347		USED ON		DATE		SHEET 1 OF 3	
NEXT STEP		FINAL DESIGN		SCALE 4/1		BY	
APPLICATION		2					



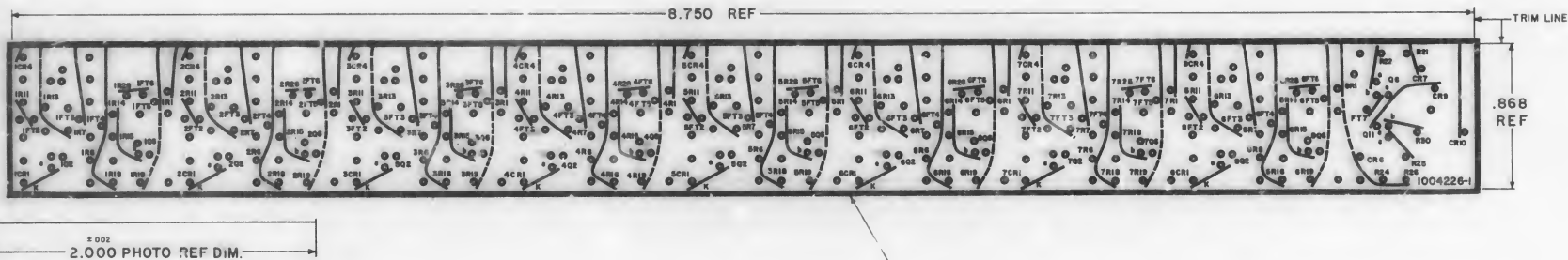
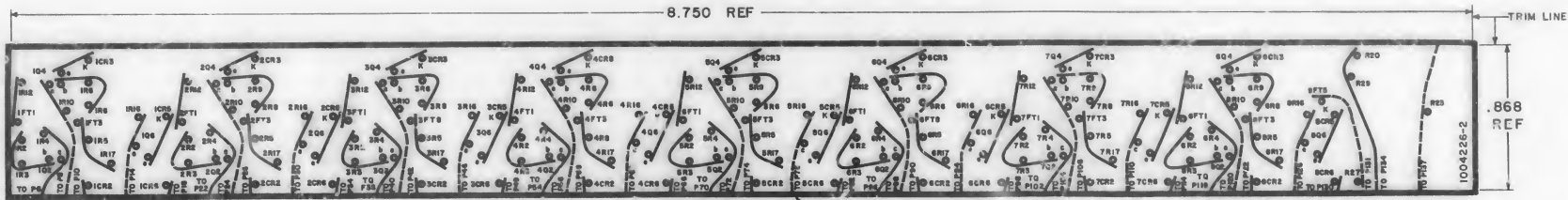
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
  3. CUT TO WITHIN .010 OF TRIM LINE
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  5. MATERIAL: FILM .006/.008THK PER L-P-340, TYPE 16, CLASS 2, STYLE 1A
  6. .045/.050 DIA PUNCH ALL HOLES

QTY		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIG NO	
1	1004225-4			INSULATOR		4	
1	1004225-3			INSULATOR		3	
1	1004225-2			INSULATOR		2	
1	1004225-1			INSULATOR		1	

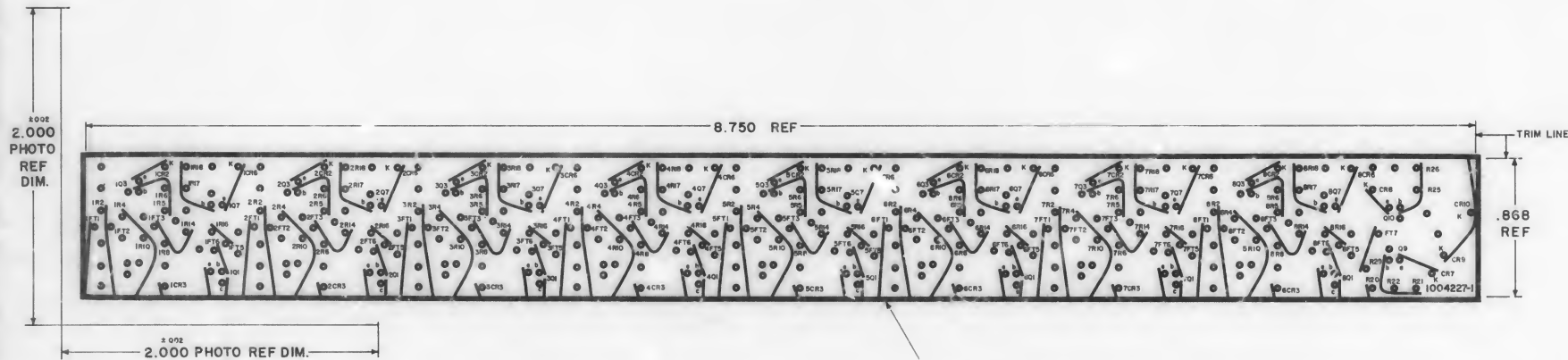
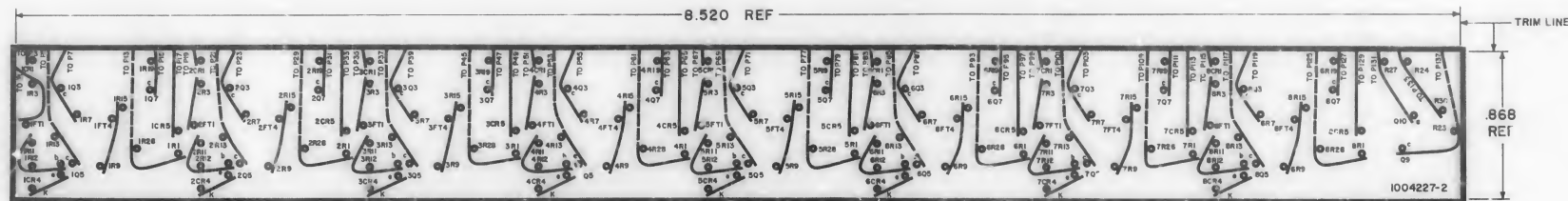
UNITED STATES GOVERNMENT		MANNED SPACECRAFT CENTER	
HOUSTON TEXAS		HOUSTON TEXAS	
DRAWN BY: <i>[Signature]</i> DATE: <i>10/1/67</i>		INSULATOR PHOTOGRAPHIC MASTER	
CHECKED BY: <i>[Signature]</i> DATE: <i>10/1/67</i>		INTERFACE MODULE 20 OR 40	
APPROVED BY: <i>[Signature]</i> DATE: <i>10/1/67</i>		E 1004225	
MATERIAL: <i>1008115</i>		MATERIAL: <i>1008115</i>	
NEAT TREATMENT: <i>1008115</i>		NEAT TREATMENT: <i>1008115</i>	
APPLICATION: <i>1008115</i>		APPLICATION: <i>1008115</i>	





- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PREPARED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESSOR NET/CO SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
  3. CUT TO WITHIN .010 OF TRIMLINE
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  5. MATL. FILM .004/.008 THICK PER L-P-340. TYPE 2B, CLASS 2, STYLE 1A
  6.  $\phi$  .035/.048 DIA PUNCHALL HOLE

1004226-2		INSULATOR		2	
1004226-1		INSULATOR		1	
QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION		FIND NO	
LIST OF MATERIALS					
MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
INSULATOR PHOTOGRAPHIC MASTER ROPE STRAND SELECT MODULE					
1004226-1		1004226-2		1004226-3	
1004226-4		1004226-5		1004226-6	
1004226-7		1004226-8		1004226-9	
1004226-10		1004226-11		1004226-12	
1004226-13		1004226-14		1004226-15	
1004226-16		1004226-17		1004226-18	
1004226-19		1004226-20		1004226-21	
1004226-22		1004226-23		1004226-24	
1004226-25		1004226-26		1004226-27	
1004226-28		1004226-29		1004226-30	
1004226-31		1004226-32		1004226-33	
1004226-34		1004226-35		1004226-36	
1004226-37		1004226-38		1004226-39	
1004226-40		1004226-41		1004226-42	
1004226-43		1004226-44		1004226-45	
1004226-46		1004226-47		1004226-48	
1004226-49		1004226-50		1004226-51	
1004226-52		1004226-53		1004226-54	
1004226-55		1004226-56		1004226-57	
1004226-58		1004226-59		1004226-60	
1004226-61		1004226-62		1004226-63	
1004226-64		1004226-65		1004226-66	
1004226-67		1004226-68		1004226-69	
1004226-70		1004226-71		1004226-72	
1004226-73		1004226-74		1004226-75	
1004226-76		1004226-77		1004226-78	
1004226-79		1004226-80		1004226-81	
1004226-82		1004226-83		1004226-84	
1004226-85		1004226-86		1004226-87	
1004226-88		1004226-89		1004226-90	
1004226-91		1004226-92		1004226-93	
1004226-94		1004226-95		1004226-96	
1004226-97		1004226-98		1004226-99	
1004226-100		1004226-101		1004226-102	
1004226-103		1004226-104		1004226-105	
1004226-106		1004226-107		1004226-108	
1004226-109		1004226-110		1004226-111	
1004226-112		1004226-113		1004226-114	
1004226-115		1004226-116		1004226-117	
1004226-118		1004226-119		1004226-120	
1004226-121		1004226-122		1004226-123	
1004226-124		1004226-125		1004226-126	
1004226-127		1004226-128		1004226-129	
1004226-130		1004226-131		1004226-132	
1004226-133		1004226-134		1004226-135	
1004226-136		1004226-137		1004226-138	
1004226-139		1004226-140		1004226-141	
1004226-142		1004226-143		1004226-144	
1004226-145		1004226-146		1004226-147	
1004226-148		1004226-149		1004226-150	
1004226-151		1004226-152		1004226-153	
1004226-154		1004226-155		1004226-156	
1004226-157		1004226-158		1004226-159	
1004226-160		1004226-161		1004226-162	
1004226-163		1004226-164		1004226-165	
1004226-166		1004226-167		1004226-168	
1004226-169		1004226-170		1004226-171	
1004226-172		1004226-173		1004226-174	
1004226-175		1004226-176		1004226-177	
1004226-178		1004226-179		1004226-180	
1004226-181		1004226-182		1004226-183	
1004226-184		1004226-185		1004226-186	
1004226-187		1004226-188		1004226-189	
1004226-190		1004226-191		1004226-192	
1004226-193		1004226-194		1004226-195	
1004226-196		1004226-197		1004226-198	
1004226-199		1004226-200		1004226-201	
1004226-202		1004226-203		1004226-204	
1004226-205		1004226-206		1004226-207	
1004226-208		1004226-209		1004226-210	
1004226-211		1004226-212		1004226-213	
1004226-214		1004226-215		1004226-216	
1004226-217		1004226-218		1004226-219	
1004226-220		1004226-221		1004226-222	
1004226-223		1004226-224		1004226-225	
1004226-226		1004226-227		1004226-228	
1004226-229		1004226-230		1004226-231	
1004226-232		1004226-233		1004226-234	
1004226-235		1004226-236		1004226-237	
1004226-238		1004226-239		1004226-240	
1004226-241		1004226-242		1004226-243	
1004226-244		1004226-245		1004226-246	
1004226-247		1004226-248		1004226-249	
1004226-250		1004226-251		1004226-252	
1004226-253		1004226-254		1004226-255	
1004226-256		1004226-257		1004226-258	
1004226-259		1004226-260		1004226-261	
1004226-262		1004226-263		1004226-264	
1004226-265		1004226-266		1004226-267	
1004226-268		1004226-269		1004226-270	
1004226-271		1004226-272		1004226-273	
1004226-274		1004226-275		1004226-276	
1004226-277		1004226-278		1004226-279	
1004226-280		1004226-281		1004226-282	
1004226-283		1004226-284		1004226-285	
1004226-286		1004226-287		1004226-288	
1004226-289		1004226-290		1004226-291	
1004226-292		1004226-293		1004226-294	
1004226-295		1004226-296		1004226-297	
1004226-298		1004226-299		1004226-300	
1004226-301		1004226-302		1004226-303	
1004226-304		1004226-305		1004226-306	
1004226-307		1004226-308		1004226-309	
1004226-310		1004226-311		1004226-312	
1004226-313		1004226-314		1004226-315	
1004226-316		1004226-317		1004226-318	
1004226-319		1004226-320		1004226-321	
1004226-322		1004226-323		1004226-324	
1004226-325		1004226-326		1004226-327	
1004226-328		1004226-329		1004226-330	
1004226-331		1004226-332		1004226-333	
1004226-334		1004226-335		1004226-336	
1004226-337		1004226-338		1004226-339	
1004226-340		1004226-341		1004226-342	
1004226-343		1004226-344		1004226-345	
1004226-346		1004226-347		1004226-348	
1004226-349		1004226-350		1004226-351	
1004226-352		1004226-353		1004226-354	
1004226-355		1004226-356		1004226-357	
1004226-358		1004226-359		1004226-360	
1004226-361		1004226-362		1004226-363	
1004226-364		1004226-365		1004226-366	
1004226-367		1004226-368		1004226-369	
1004226-370		1004226-371		1004226-372	
1004226-373		1004226-374		1004226-375	
1004226-376		1004226-377		1004226-378	
1004226-379		1004226-380		1004226-381	
1004226-382		1004226-383		1004226-384	
1004226-385		1004226-386		1004226-387	
1004226-388		1004226-389		1004226-390	
1004226-391		1004226-392		1004226-393	
1004226-394		1004226-395		1004226-396	
1004226-397		1004226-398		1004226-399	
1004226-400		1004226-401		1004226-402	
1004226-403		1004226-404		1004226-405	
1004226-406		1004226-407		1004226-408	
1004226-409		1004226-410		1004226-411	
1004226-412		1004226-413		1004226-414	
1004226-415		1004226-416		1004226-417	
1004226-418		1004226-419		1004226-420	
1004226-421		1004226-422		1004226-423	
1004226-424		1004226-425		1004226-426	
1004226-427		1004226-428		1004226-429	
1004226-430		1004226-431		1004226-432	
1004226-433		1004226-434		1004226-435	
1004226-436		1004226-437		1004226-438	
1004226-439		1004226-440		1004226-441	
1004226-442		1004226-443		1004226-444	
1004226-445		1004226-446		1004226-447	
1004226-448		1004226-449		1004226-450	
1004226-451		1004226-452		1004226-453	
1004226-454		1004226-455		1004226-456	
1004226-457		1004226-458		1004226-459	
1004226-460		1004226-461		1004226-462	
1004226-463		1004226-464		1004226-465	
1004226-466		1004226-467		1004226-468	
1004226-469		1004226-470		1004226-471	
1004226-472		1004226-473		1004226-474	
1004226-475		1004226-476		1004226-477	
1004226-478		1004226-479		1004226-480	
1004226-481		1004226-482		1004226-483	
1004226-484		1004226-485		1004226-486	
1004226-487		1004226-488		1004226-489	
1004226-490		1004226-491		1004226-492	
1004226-493		1004226-494		1004226-495	
1004226-496		1004226-497		1004226-498	
1004226-499		1004226-500		1004226-501	
1004226-502		1004226-503		1004226-504	
1004226-505		1004226-506		1004226-507	
1004226-508		1004226-509		1004226-510	
1004226-511		1004226-512		1004226-513	
1004226-514		1004226-515		1004226-516	
1004226-517		1004226-518		1004226-519	
1004226-520		1004226-521		1004226-522	
1004226-523		1004226-524		1004226-525	
10					

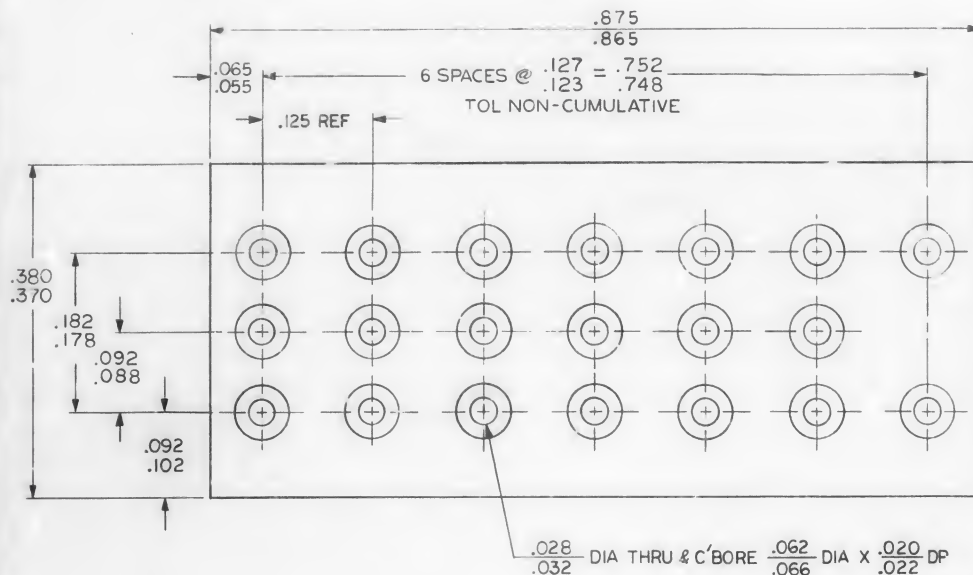


## NOTES

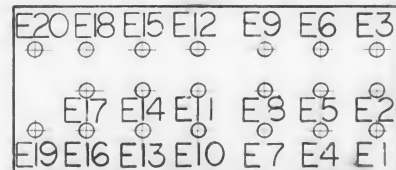
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-O-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATL. FILM .006/.008 THICK PER L-F-340, TYPE .B, CLASS 2, STYLE 1A
6. .035/.045 DIA PUNCH ALL HOLES

[illegible]

NOTICE - THIS GOVERNMENT DRAWING, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ACCEPTS NO RESPONSIBILITY FOR ANY INJURY OR DAMAGE TO PERSONS OR PROPERTY, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PROVIDED, OR IN ANY WAY SUPPLIED THE DATA HEREIN, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY EVIDENCE OR OTHERWISE AS IN ANY MANNER WARRANTING THE HOLDING OF ANY OTHER PERSON OR CORPORATION, OR CONTRACTOR, OR ANY SERVICE OR PERFORMANCE BY SUBCONTRACTOR, OR, OR SHALL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.



.028 DIA THRU & C'BORE .062 DIA X .020 DP  
.032 .066 .022



VIEW A-A

FOR MARKING ONLY

SCALE 5/1

# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L: .040 THK G-10 PLASTIC SHEET PER L-F-340, TYPE GEE
3. REMOVE BURRS AND BREAK SHARP EDGES
4. MARK .05 HIGH BLACK PER ND1002019 APPROX WHERE SHOWN

QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS NO. CONTRACT		DATE 1 AUG 63	
DRAWN <i>[Signature]</i>		CHECKED <i>[Signature]</i>	
APPROVAL <i>[Signature]</i>		APPROVAL <i>[Signature]</i>	
NASA APPROVAL <i>[Signature]</i>		NASA DRAWING NO. 1004229	
MIT APPROVAL <i>[Signature]</i>		SCALE 10/1 WT	
APPLICATION		SHEET 1 OF 1	

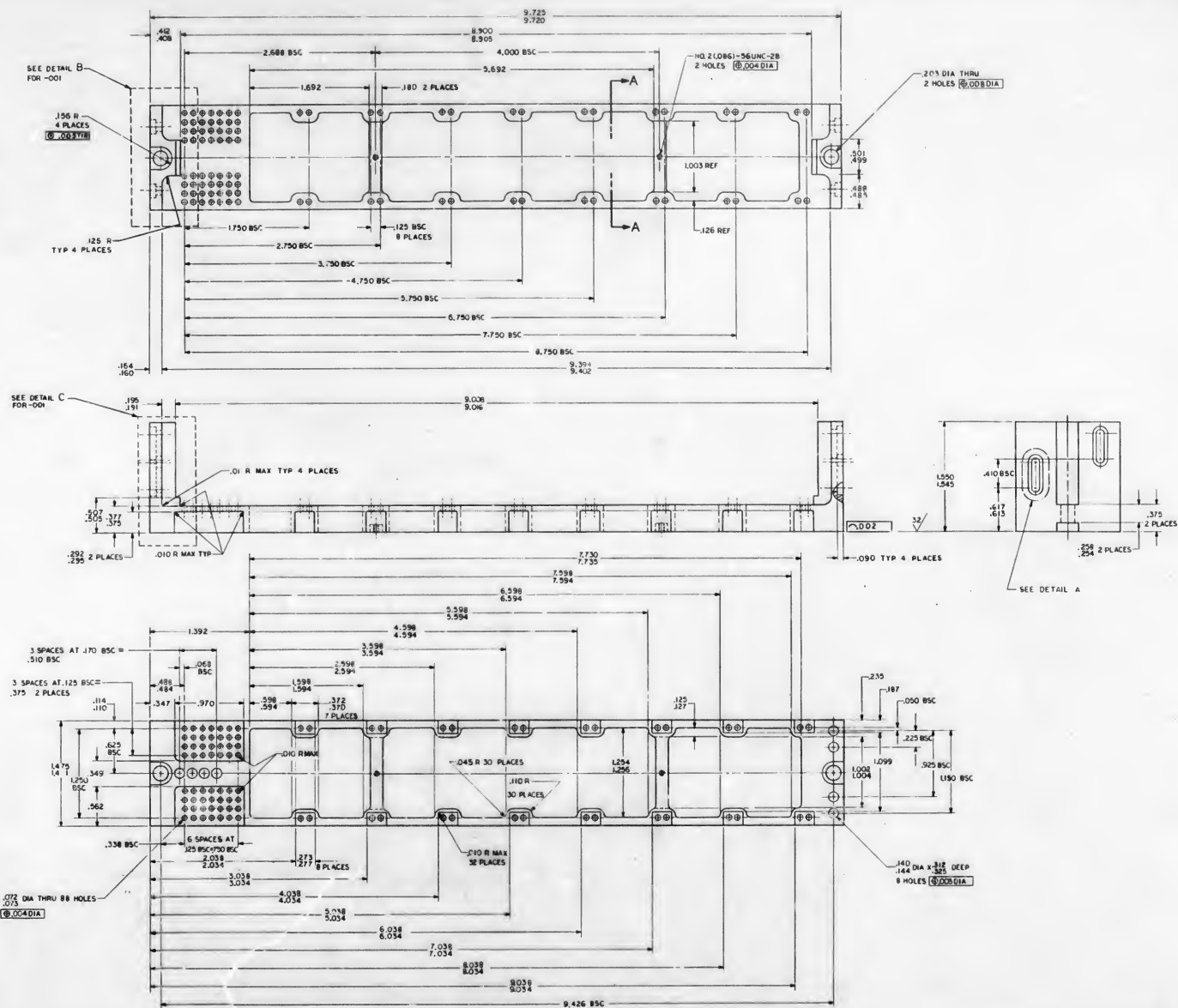
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE 2		
1003134	HEAT TREATMENT	
NEXT ASSY	USED ON	
FINAL FINISH		





NOTES

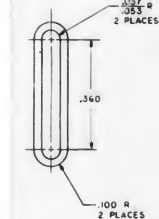
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: DIE OR INVESTMENT CAST A356 AL PER MIL-C-21800, COMP 1, CLASS 10
3. ALL MATERIAL: 6061-T6 AL PER QQ-A-327 TEMP T6
4. FINISH: ANODIZE PER MIL-A-8625 TYPE II, DYE BULK
5. UNLESS OTHERWISE SPECIFIED ALL FILETS AND ROUNDS .005(1/32) RADIUS
6. REMOVE ALL BURRS AND BREAK SHARP EDGES .005(1/32) R
7. UNLESS OTHERWISE SPECIFIED 1/8" ALL OVER
8. IDENTIFY PER NIDODICE PARA 3.7.7.1



		UNLESS OTHERWISE SPECIFIED
		SHAW HARDY - ARE IN INCHES
		TRACTIONS
		DECIMALS
		" .005 "
		DO NOT SCALE THIS DRAWING
		MATERIAL
1003:55		HEAT TREATMENT
NEXT COPY	USED ON	FULL PRICE
	APPLICATION	

296 2 PLACES

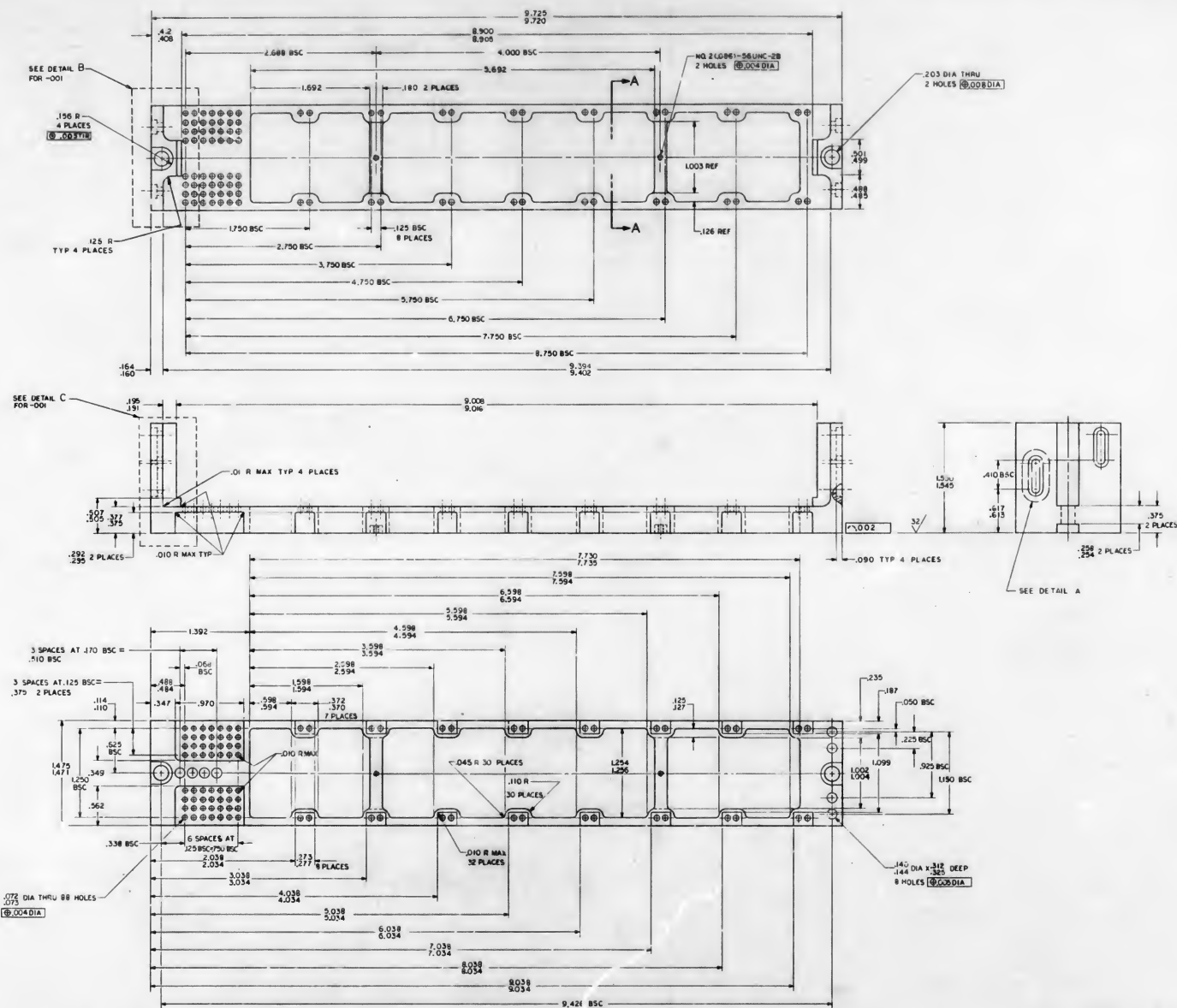
ION A-A



DETAIL A  
TYP 4 PLACES  
SCALE 4/1

AS PRESCRIBED BY MIL-D-70327  
-C-21180, COMP 1, CLASS 10.

.005/.015 RADIUS

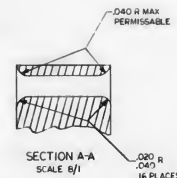


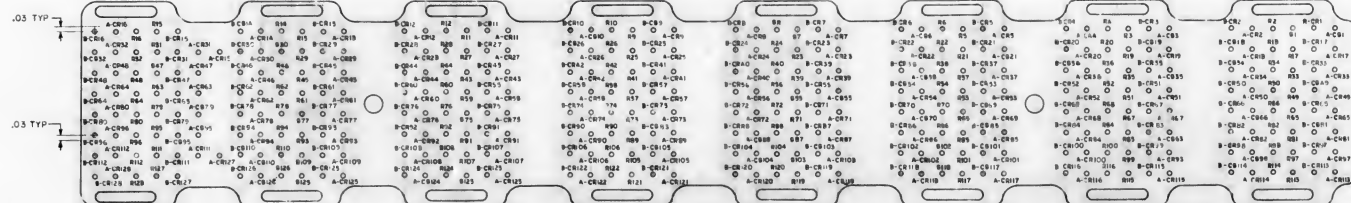
DATE	DESCRIPTION	AMOUNT	DATE	DESCRIPTION	AMOUNT
A	REVISED PER TORR	10/27	11/27		
B	REVISED PER TORR				
C	REVISED PER TORR	11/27			
D	REVISED PER TORR	11/27			
E	REVISED PER TORR	11/27			
F	REVISED PER TORR	11/27			
G	REVISED PER TORR	11/27			
H	REVISED PER TORR	11/27			
I	REVISED PER TORR	11/27			
J	REVISED PER TORR	11/27			

[illegible]



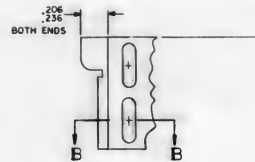


[illegible]

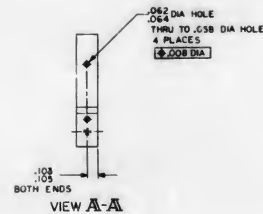




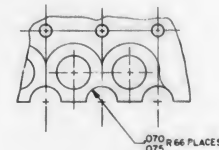




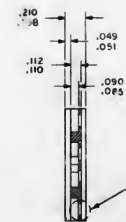
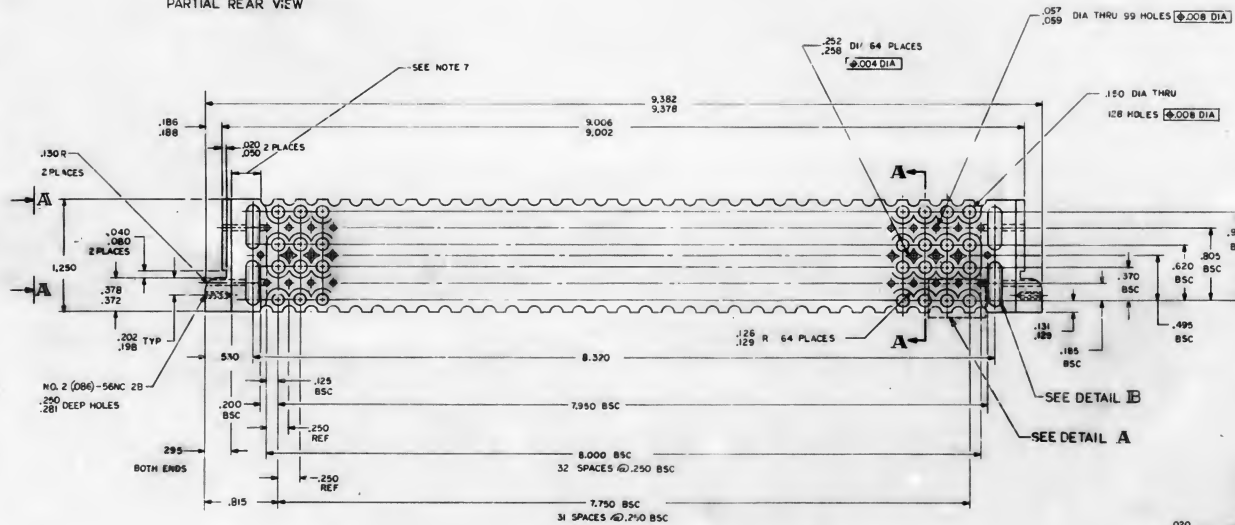
PARTIAL REAR VIEW



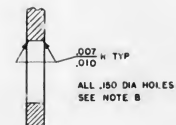
VIEW A-A



DETAIL A  
SCALE 5/1



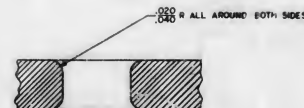
SECTION A-A



DETAIL C  
SCALE 10/1



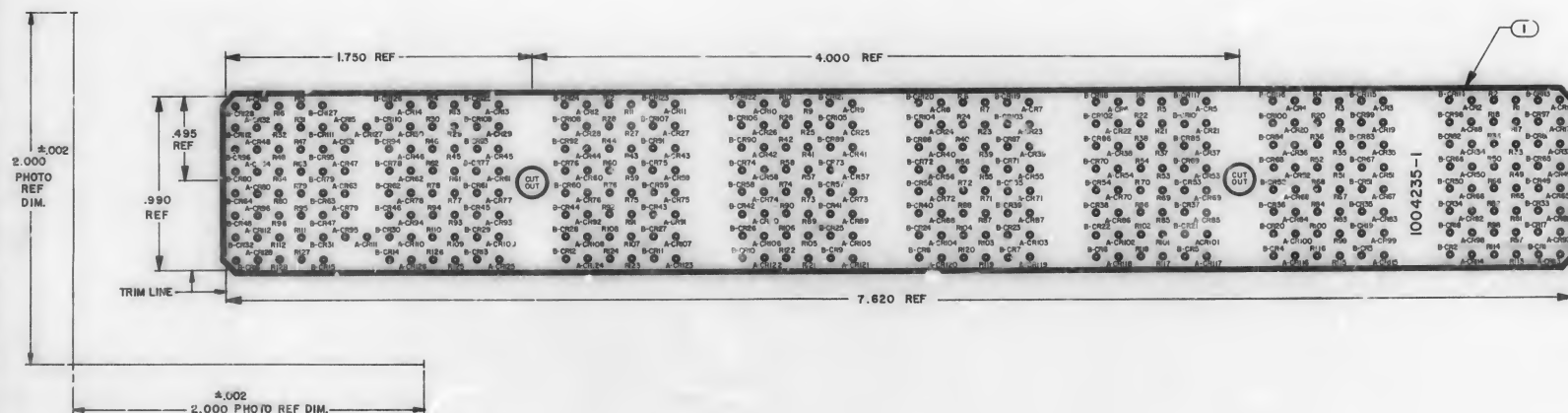
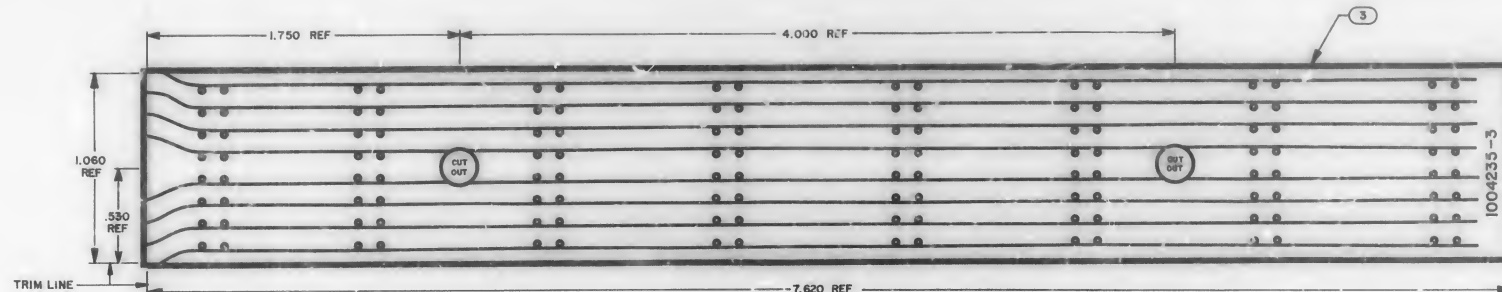
DETAIL B  
SCALE 10/1  
4 PLACES  
ROTATED 90°



SECTION B-B  
SCALE 10/1  
TYP 4 PLACES

- NOTES
1. MATERIAL: DIE OR INVESTMENT CAST A-256 AL CLASS 10 CAMP 1 PER MIL-C-180, ALT MAT 6061 T6 PER QQ-A-32776
  2. SURFACE QUALITY AS CAST
  3. REMOVE ALL BURRS & SHARP EDGES
  4. HARD COAT ANODIZE PER AMS 2469 .002/.0015 THICK
  5. ALL ABOVE DIMENSIONS APPLY AFTER FINISHING
  6. PLUS TAPPED HOLES BEFORE COATING
  7. INDICATED AREA TO HAVE .0008 MIN BOTH SIDES 4 PLACES
  8. SURFACE QUALITY OF ALL .150 DIA HOLES AND RELATED RADI TO BE .5 AFTER ANODIZE

QUANTITY		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
<div style="display: flex; justify-content: space-between;"> <div> <p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 1</p> </div> <div> <p>DATE: 10/1/52 DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature] APPROVAL: [Signature]</p> </div> </div>							
<p>1005/33</p>				<p>1005/33</p>			
<p>NEAT TREATMENT</p>				<p>NEAT TREATMENT</p>			
<p>USED ON</p>				<p>USED ON</p>			
<p>APPLICATION</p>				<p>APPLICATION</p>			
<p>SEE NOTE 4</p>				<p>SEE NOTE 4</p>			
<p>SCALE 2/1</p>				<p>SCALE 2/1</p>			
<p>1004233</p>				<p>1004233</p>			
<p>1004233</p>				<p>1004233</p>			



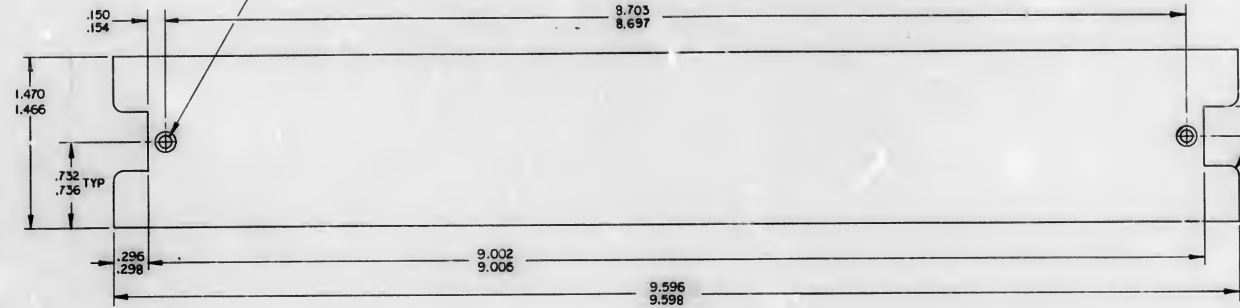
NOTES:

1. INTERPRET DRIVING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL C<sup>2</sup> THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT TO WIDTHY .002 OF THIM LENS
6. @ .045 / .050 DIA PUNCH ALL HOLES
7. K DENOTES CATHODE SIDE OF DIODE

② REPLACES REV A WITH CHANGES

1004235-3		INSULATOR		1	
1004235-1		INSULATOR		1	
QTY REQ	PART OR EXACTLYING NO		NOMENCLATURE AND DESCRIPTION		FRS NO
LIST OF MATERIALS					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES OF FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING EXCEPT:			MANNED SPACECRAFT CENTER INSULATOR TEAM		
SEE NOTES			INSULATOR, PHOTOGRAPHIC MASTER ROPE MEMORY MODULE		
100433	PLAT TREATMENT		CUST IDENT NO		NSA DRAWING NO
NEXT ASSY	USE ON	FINAL FRSH	E		1004235
APPLICATION		PART APPROVAL <i>6/26/68</i> NUAL # 71		SHEET 1 OF 1	



© 2006 The Authors  
Journal compilation © 2006 Blackwell Publishing Ltd

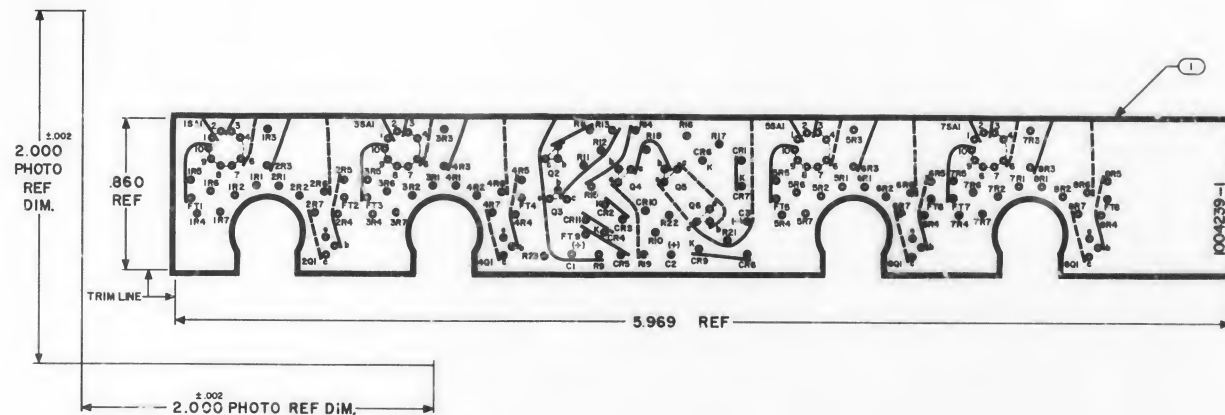
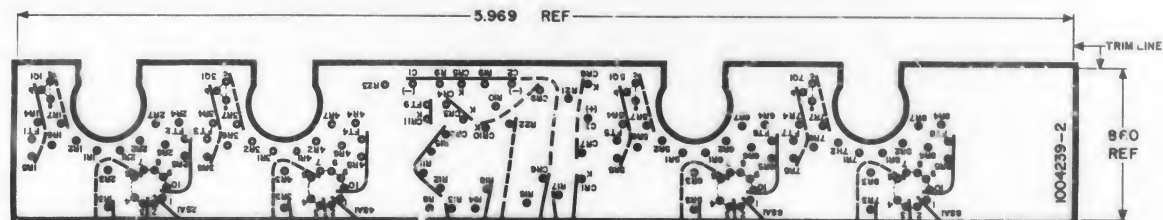


1 INTERPRET DRAWING IN ACCORDANCE WITH  
STANDARDS PRESCRIBED BY MIL-D-70327  
2 MATERIAL: .050 THK 5052-H32 ALUM PER  
QQ-A-318 TEMPER H32  
3 FINISH: BLACK ANODIZE PER MIL-A-8625 TYPE II

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION NO.		FIND NO.	
				LIST OF MATERIALS			
		M1Y INSTRUMENTATION LAB CHAMBER HALL DESG <u>2</u> <u>100333</u> DATE <u>8-1-67</u> CHECKED <u>W. J. [Signature]</u> APPROVAL <u>W. J. [Signature]</u>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS COVER ROPE MEMORY MODULE			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS $\pm$ DECIMALS $\pm$ ANGLES $\pm$ 20" DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 2		HEAT TREATMENT FINISH FINISH SEE NOTE 3		NASA DRAWING NO. 1004236			
1003:33 NEXT ASSY USED ON APPLICATION		NASA APPROVAL <u>[Signature]</u> M1T APPROVAL <u>W. J. [Signature]</u>		CODE IDENT NO. SIZE <b>D</b> SCALE 2/1 WT		SHEET OF 1	



CITY		PART OR IDENTIFYING NO		NONMILITARY OR DESCRIPTION		F. N. NO.	
LIST OF MATERIALS							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES .04 .01 .01 .01 DO NOT SCALE THIS DRAWING MATERIAL				M. T. V. INSTRUMENTATION LAB CHICAGO, ILL. DRAWN & CHECKED DATE 7/27/64 BY J. H. HARRIS APPROVAL DATE 8/1/64 BY J. H. HARRIS			
SEE NOTE 5 PART IDENTIFIER 				MANMED SPACECRAFT CENTER HOUSTON, TEXAS INSULATOR PHOTOGRAPHIC MASTER IDENTIFY MODULE A19 OR A39 CODE IDENT NO. SIZE 1004238 E 1004238			
100B23		NEXT ASSEMBLY USED ON		FINAL FINISH		NEXT APPROVAL DATE 	



- NOTES:
1. INTERPRET DRAWINGS IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70527
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PHOTOGRAPHIC OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
  3. MATERIAL: FILM .006/.008 THICK PER L-P-340 TYPE I CLASS 2, STYLE IA
  4. MAKE MASTER PATTERN POSITIVE FILMS .00 DIMENSIONS SHOWN
  5. CUT TO WITHIN .002 OF TRIMLINE
  6. .030/.035 DIA PUNCH ALL HOLES

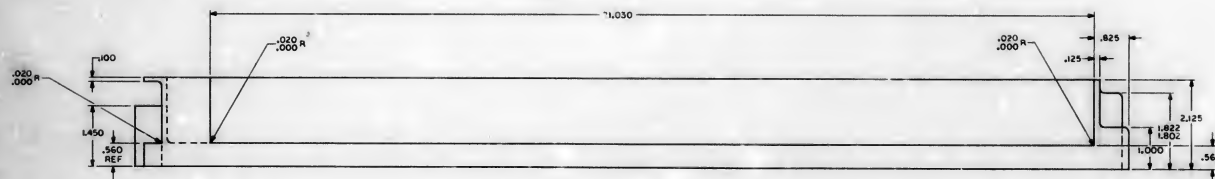
1004239-2		INSULATOR		2																																					
1004239-1		INSULATOR		1																																					
QTY	1	PART OR IDENTIFYING NO.		MANUFACTURE OR DESCRIPTION																																					
LIST OF MATERIALS																																									
<table border="1"> <tr> <td colspan="2">UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</td> <td colspan="2">TOLERANCES ON DIMENSIONS</td> <td colspan="2">FRACTIONS DECIMALS ANGLES</td> </tr> <tr> <td colspan="2">FRACTIONS</td> <td colspan="2">DECIMALS</td> <td colspan="2">ANGLES</td> </tr> <tr> <td colspan="2">DO NOT SCALE THIS DRAWING</td> <td colspan="2">SEE NOTE 3</td> <td colspan="2"></td> </tr> <tr> <td colspan="2">HEAT TREATMENT</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">FINISH</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">APPLICATION</td> <td colspan="2"></td> <td colspan="2"></td> </tr> </table>						UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ON DIMENSIONS		FRACTIONS DECIMALS ANGLES		FRACTIONS		DECIMALS		ANGLES		DO NOT SCALE THIS DRAWING		SEE NOTE 3				HEAT TREATMENT						FINISH						APPLICATION					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ON DIMENSIONS		FRACTIONS DECIMALS ANGLES																																					
FRACTIONS		DECIMALS		ANGLES																																					
DO NOT SCALE THIS DRAWING		SEE NOTE 3																																							
HEAT TREATMENT																																									
FINISH																																									
APPLICATION																																									
<table border="1"> <tr> <td colspan="2">MANNED SPACECRAFT CENTER</td> <td colspan="2">INSULATOR, PHOTOGRAPHIC MASTER ERASABLE SENSE AMPLIFIER MODULE</td> <td colspan="2">COORDINATE NO. 1004239</td> </tr> <tr> <td colspan="2">SCALE 4/1</td> <td colspan="2">SHEET 1 OF 1</td> <td colspan="2"></td> </tr> </table>						MANNED SPACECRAFT CENTER		INSULATOR, PHOTOGRAPHIC MASTER ERASABLE SENSE AMPLIFIER MODULE		COORDINATE NO. 1004239		SCALE 4/1		SHEET 1 OF 1																											
MANNED SPACECRAFT CENTER		INSULATOR, PHOTOGRAPHIC MASTER ERASABLE SENSE AMPLIFIER MODULE		COORDINATE NO. 1004239																																					
SCALE 4/1		SHEET 1 OF 1																																							







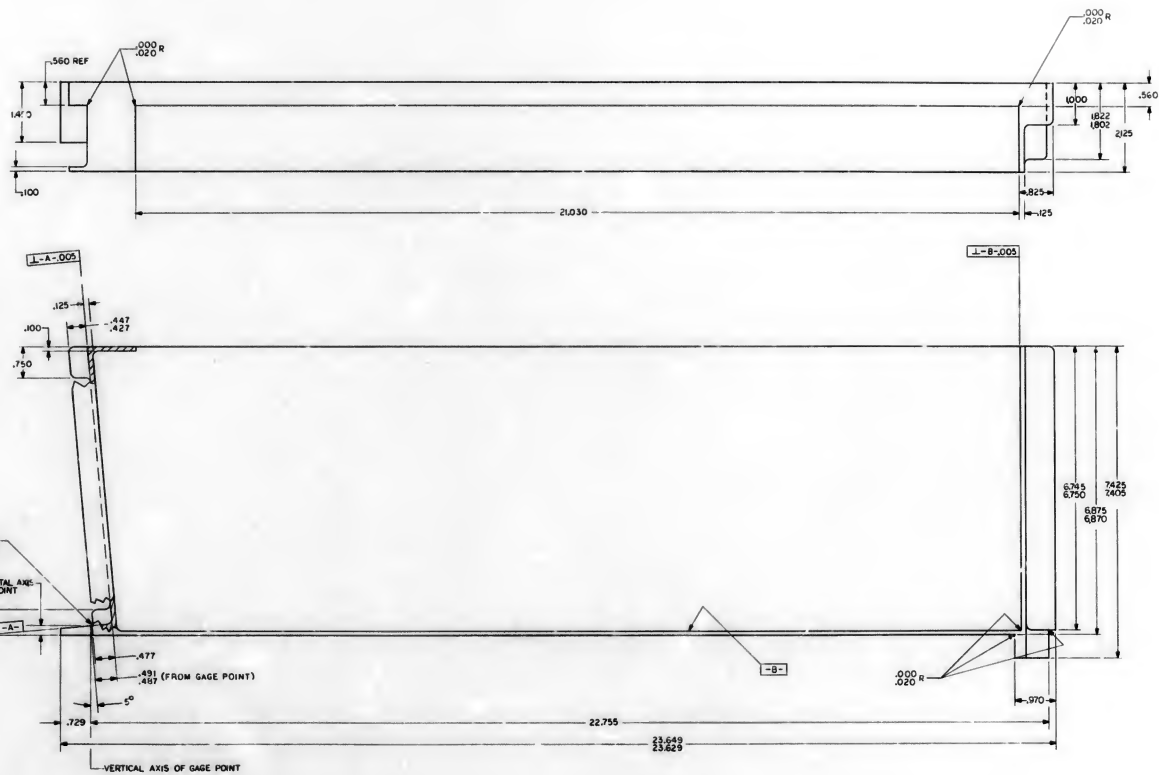
CLASS B RELEASE TDR No. 02550 DATE 8/14/63



OTHERWISE SPECIFIED

1004240

STUDY NO. _____ PART OR SUBPART NO. _____		MODIFICATION OR REVISION NO. _____		FIG. NO. _____
LIST OF MATER. _____		NAME OF MATER. _____		
SMALLS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES 1/2 172° DO NOT SCALE THIS DRAWING MATERIAL _____ SEE NOTE 2		INSTRUMENTATION LAB _____ DATE 2-2-69 CHECKED _____ APPROVED _____ APPROVAL _____ DATA ACQUISITION _____ TEST APPROVAL _____ SCALE 1/1" = 1"		
TEST TREATMENT _____ NEXT ASSEMBLY _____ USED ON _____ APPLICATION _____		VIBRATION MOCKUP TRAY A AND B RIGHT HAND BOLD DIMENSIONS IN INCHES 10042240		



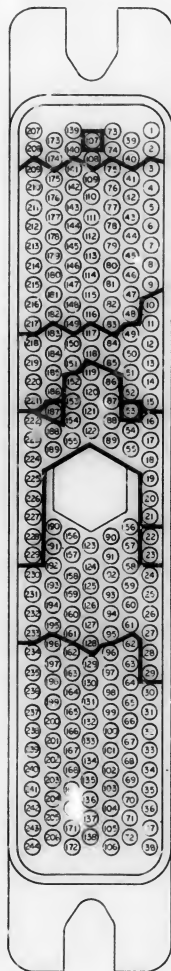
CLASS B RELEASE TDR No. 02550 DATE 8/14/63

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE OR FINISH FRACTIONS DECIMALS ANGLES 1/2" 172° DO NOT SCALE DIMENSIONS MATERIAL SEE NOTE 2		CITY INSTRUMENTATION LAB DRAWN BY <i>JP</i> DATE <i>7/2/11</i> CHECKED BY <i>JP</i> DATE <i>12/16/11</i> APPROVAL <i>[Signature]</i>		PART OR IDENTIFYING NO.		NO INCLUSIVE OR DESCRIPTION		FIN NO.	
BEST COPY USED ON		PAID APPROVAL <i>[Signature]</i>		LIST OF MATERIALS NAMED SPECIFICATION CENTER HOUSTON, TEXAS		VIBRATION MOCKUP TRAY A AND B LEFT HAND		DRAWING NO. 1004241	
APPLICATION		PAID APPROVAL <i>[Signature]</i>		SCALE 1/1		SHEET 1 OF 1			



NOTES - THIS DRAWING SHOWS SPECIFICATIONS OF WIRE BUNDLE AND THE PIN AND CABLE GROUPS. THE CABLE GROUPS ARE SHOWN IN THE DRAWING TO INDICATE THE LOCATION OF THE CABLE GROUPS. THE CABLE GROUPS ARE SHOWN IN THE DRAWING TO INDICATE THE LOCATION OF THE CABLE GROUPS. THE CABLE GROUPS ARE SHOWN IN THE DRAWING TO INDICATE THE LOCATION OF THE CABLE GROUPS.

REVISIONS 02/86			
BY	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 08/19	11/1/84	FOR JLR
B	REVISED PER TORR 08/61	11/1/84	FOR JLR
C	REVISED PER TORR 06/230	11/1/84	FOR JLR



207 168	173 239	139 168	107 245	71 167	33 239	1 167
208 170	174 240	140 170	108 241	74 169	34 243	2 169
209 247	175 215 SIG.	141 213	109 217 SIG.	77 212	37 219 SIG.	3 211
210 214 SIG.	176 215 RET.	142 216 SIG.	110 217 RET.	78 218 SIG.	38 219 RET.	4 220 SIG.
211 214 RET.	177 222 SIG.	143 216 RET.	111 224 SIG.	79 218 RET.	39 226 SIG.	5 220 RET.
212 221 SIG.	178 222 RET.	144 223 SIG.	112 224 RET.	80 225 SIG.	40 226 RET.	6 227 SIG.
213 221 RET.	179 229 SIG.	145 223 RET.	113 221 SIG.	81 225 RET.	41 233 SIG.	7 227 RET.
214 228 SIG.	180 229 RET.	146 230 SIG.	114 231 RET.	82 232 SIG.	42 233 RET.	8 234 SIG.
215 228 RET.	181 236 SIG.	147 230 RET.	115 238 SIG.	83 242 RET.	43 244 SIG.	9 234 RET.
216 235 SIG.	182 236 RET.	148 237 SIG.	116 238 RET.	84 242 SIG.	44 244 RET.	10 248
217 235 RET.	183 202 SIG.	149 237 RET.	117 204 SIG.	85 242 RET.	45 244 RET.	11 248
218 201 SIG.	184 202 RET.	150 203 SIG.	118 204 RET.	86 242 RET.	46 244 RET.	12 209 SIG.
219 201 RET.	185 210 SIG.	151 203 RET.	119 101 SIG.	87 242 RET.	47 244 RET.	13 209 RET.
220 208 SIG.	186 210 RET.	152 158 SIG.	120 101 RET.	88 242 RET.	48 244 RET.	14 207 SIG.
221 208 RET.	187 250	153 158 RET.	121 165 SIG.	89 242 RET.	49 244 RET.	15 207 RET.
222 161 SIG.	188 160 SIG.	154 159 SIG.	122 165 RET.	90 103 SIG.	50 178	16 105 SIG.
223 161 RET.	189 160 RET.	155 159 RET.		91 103 RET.	51 104 SIG.	17 105 RET.
224 162 SIG.					52 104 RET.	18 106 SIG.
225 162 RET.						19 106 SIG.
226 163 SIG.						20 107 SIG.
227 163 RET.						21 107 RET.
228 164 SIG.	190 109 SIG.	156 110 SIG.	123 111 SIG.	92 112 SIG.	53 118 SIG.	22 179
229 164 RET.	191 109 RET.	157 110 RET.	124 111 RET.	93 112 RET.	54 118 RET.	23 180
230 168 SIG.	192 123 SIG.	158 124 SIG.	125 132 SIG.	94 133 SIG.	55 119 SIG.	24 120 SIG.
231 108 RET.	193 123 RET.	159 124 RET.	126 132 RET.	95 133 RET.	56 119 RET.	25 120 RET.
232 122 SIG.	194 134 SIG.	160 135 SIG.	127 136 SIG.	96 137 SIG.	57 138 SIG.	26 121 SIG.
233 122 RET.	195 134 RET.	161 135 RET.	128 136 RET.	97 137 RET.	58 138 RET.	27 121 RET.
234 166	196 171	162 172	129 173	98 175	59 177	28 141 SIG.
235 114 SIG.	197 115 SIG.	163 176 SIG.	130 117 SIG.	99 131 SIG.	60 126 SIG.	29 141 RET.
236 114 RET.	198 115 RET.	164 176 RET.	131 117 RET.	100 131 RET.	61 126 RET.	30 127 SIG.
237 128 SIG.	199 129 SIG.	165 130 SIG.	132 139 SIG.	101 140 SIG.	62 142 SIG.	31 127 RET.
238 128 RET.	200 129 RET.	166 130 RET.	133 139 RET.	102 140 RET.	63 142 RET.	32 143 SIG.
239 144 SIG.	201 145 SIG.	167 146 SIG.	134 147 SIG.	103 148 SIG.	64 149 SIG.	33 143 RET.
240 144 RET.	202 145 RET.	168 146 RET.	135 147 RET.	104 155 SIG.	65 149 RET.	34 150 SIG.
241 151 SIG.	203 152 SIG.	169 153 SIG.	136 154 SIG.	105 155 RET.	66 156 SIG.	35 150 RET.
242 151 RET.	204 152 RET.	170 153 RET.	137 154 RET.	106 155 RET.	67 156 RET.	36 157 SIG.
243 183 SIG.	205 183 RET.	171	138	107	68	37 157 RET.
244 NOT AVAILABLE FOR USE	206 183 RET.	172 NOT AVAILABLE FOR USE		108 NOT AVAILABLE FOR USE	69	38 NOT AVAILABLE FOR USE

CABLE GROUP I NOT SHIELDED

CABLE GROUP II SHIELDED

CABLE GROUP III SHIELDED

CABLE GROUP IV SHIELDED

CABLE GROUP V SHIELDED

CABLE GROUP VI NOT SHIELDED

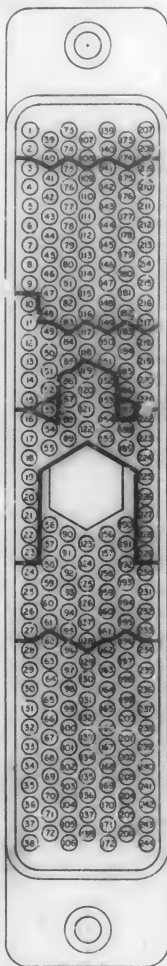
MALE PLUG  
CONTACT SIDE

NOTE  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY. REQD.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
M I T INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DRAWN BY <i>J. H. Hall</i> DATE <i>11/1/84</i>		SIGNAL PIN ASSIGNMENT	
CHECKED BY <i>J. H. Hall</i>		05A3PI CONNECTOR-(AGC TOPSA)	
APPROVAL BY <i>J. H. Hall</i>		NASA DRAWING NO. 1004245	
NASA APPROVAL <i>J. H. Hall</i>		CODE IDENT NO. D	SIZE 1
MIT APPROVAL <i>J. H. Hall</i>		SCALE NONE	SHEET OF

THIS DRAWING IS THE PROPERTY OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 03106	2-19-68	WJ
B	REVISED PER TORR 02126	2-26-68	WJ



FEMALE RECEPTACLE  
CONTACT SIDE

1 NOT AVAILABLE FOR USE	39 239	73 NOT AVAILABLE FOR USE	107 245	139 NOT AVAILABLE FOR USE	173 239	207 NOT AVAILABLE FOR USE
2 NOT AVAILABLE FOR USE	40 243	74	108 241	140	174 240	208
3 211	41 219 SIG.	75 112	109 217 SIG.	141 213	175 215 SIG.	209 247
4 220 SIG.	42 219 RET.	76 218 SIG.	110 217 RET.	142 216 SIG.	176 215 RET.	210 214 SIG.
5 220 RET.	43 219 SIG.	77 218 RET.	111 224 SIG.	143 216 RET.	177 222 SIG.	211 214 RET.
6 227 SIG.	44 226 RET.	78 225 SIG.	112 224 RET.	144 223 SIG.	178 222 RET.	212 221 SIG.
7 227 RET.	45 233 SIG.	79 225 RET.	113 231 SIG.	145 223 RET.	179 229 SIG.	213 221 RET.
8 234 SIG.	46 233 RET.	80 232 SIG.	114 231 RET.	146 230 SIG.	180 229 RET.	214 228 SIG.
9 234 RET.	47 244 SIG.	81 232 RET.	115 238 SIG.	147 230 RET.	181 236 SIG.	215 228 RET.
10 240	48 244 RET.	82 242 SIG.	116 238 RET.	148 237 SIG.	182 236 RET.	216 235 SIG.
11 249	49 204 SIG.	83 242 RET.	117 204 SIG.	149 237 RET.	183 202 SIG.	217 235 RET.
12	50 204 RET.	84 205 SIG.	118 204 RET.	150 203 SIG.	184 202 RET.	218 201 SIG.
13	51 246 SIG.	85 205 RET.	119	151 203 RET.	185 210 SIG.	219 201 RET.
14	52 246 RET.	86	120	152	186 210 RET.	220 200 SIG.
15	53	87	121	153	187 250	221 200 RET.
16 54 SIG.	54	88	122	154	188	222
17	55	89		155	189	223
18 54 RET.						224 1 SIG.
19						225
20						226 1 RET.
21						227
22	56	90	123 24 SIG.	156 14 SIG. GND	190 14 SIG.	228
23	57	91	124 24 RET.	157 24 SIG. GND	191 14 RET.	229
24	58	92	125 25 SIG.	158 15 SIG. GND	192 15 SIG.	230
25	59	93	126 25 RET.	159 15 SIG. GND	193 15 RET.	231
26	60	94	127	160 16 SIG. GND	194 16 SIG.	232
27	61	95	128	161	195 16 RET.	233
28	62	96	129	162	196	234
29	63	97	130	163	197	235
30	64	98	131	164	198	236
31	5 17 SIG. GND	99 17 RET.	132	165	199	237
32	66	100 26 SIG.	133	166	200	238
33	67 26 SIG. GND	101 26 RET.	134	167	201	239
34 11 SIG.	68 11 SIG. GND	102	135	168	202	240
35 11 RET.	69	103	136	169	203	241
36	70	104	137 NOT AVAILABLE FOR USE	170	204	242
37	71 NOT AVAILABLE FOR USE	105	138	171	205 NOT AVAILABLE FOR USE	243
38 NOT AVAILABLE FOR USE	72	106 NOT AVAILABLE FOR USE		172 NOT AVAILABLE FOR USE	206	244 NOT AVAILABLE FOR USE

CABLE GROUP I NOT SHIELDED

CABLE GROUP II SHIELDED

CABLE GROUP III SHIELDED

CABLE GROUP IV NOT SHIELDED

CABLE GROUP V SHIELDED

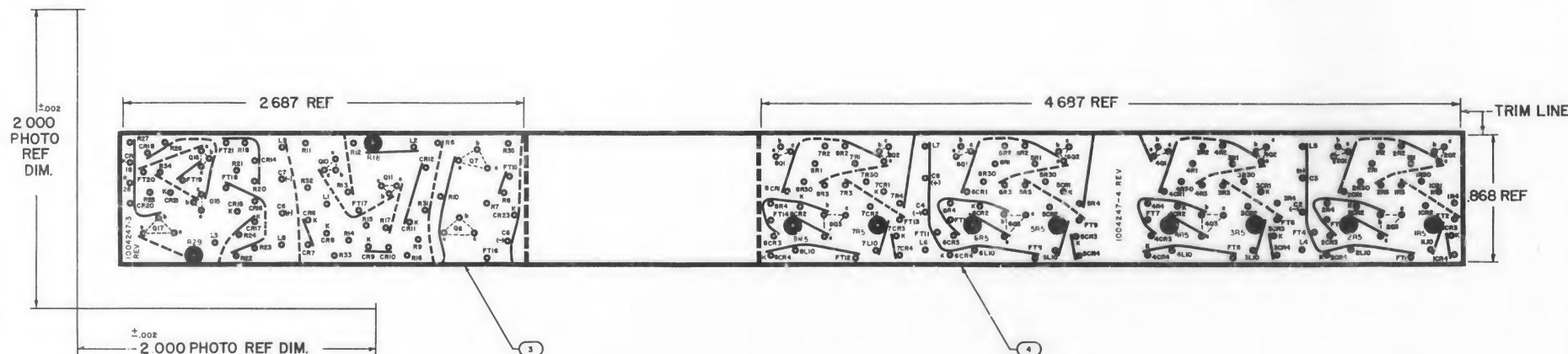
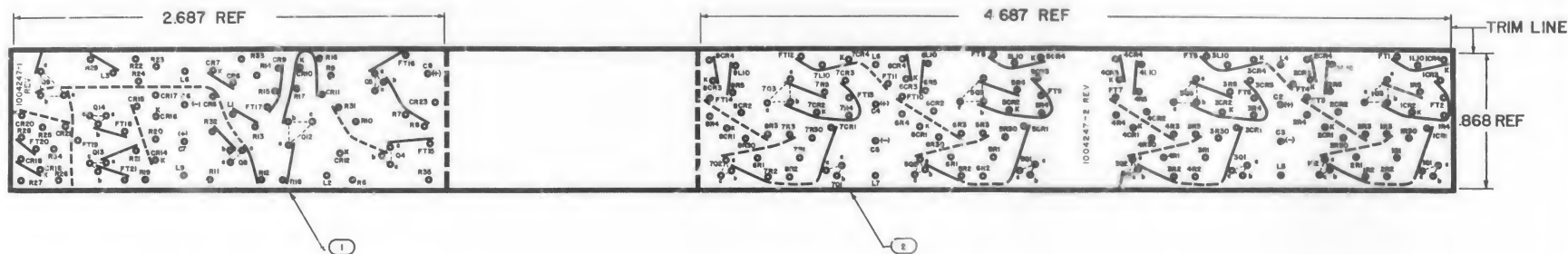
CABLE GROUP VI NOT SHIELDED

NOTE  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED  
BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FNU NO.
LIST OF MATERIALS			
INSTRUMENTATION LAB CASE-104 MASS DRAWN: 10-10-68 DATE: 10-10-68 CHECKED: J. H. H. DATE: 10-10-68 APPROVAL: J. H. H. DATE: 10-10-68 MATERIAL: 11		MANNED SPACECRAFT CENTER HOUSTON, TEXAS SIGNAL PIN ASSIGNMENT 05A3J1 CONNECTOR-(AGC TO C/M)	
HEAT TREATMENT: 11 FINAL FINISH: 11 APPLICATION: 11		NASA APPROVAL: J. H. H. DATE: 10-10-68 MIT APPROVAL: J. H. H. DATE: 10-10-68	CODE IDENT NO: D SCALE: NONE SHEET: OF

1004246 D





- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL G. THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001" .NCH PER INCH
  3. CUT TO WITHIN .010 OF TRIMLINE
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS .001
  5. MAT'L: FILM .006/.008 THICK PER L-F-340, TYPE 1B,  
CLASS 2, STYLE 1A
  6. Ø .032/.045 DIA PUNCH
  7. Ø .214/.21 DIA PUNCH

1	1004247-4	INSULATOR	
2	1004247-3	INSULATOR	
3	1004247-2	INSULATOR	
4	1004247-1	INSULATOR	
QTY REQD	PART OR IDENTIFYING NO	NAME OF PLANT OR US SUPPLIER	U S S R
LIST OF MATERIALS			
M.I.T. INTERCOMPUTER SYSTEMS LAB CAMBRIDGE, MASSACHUSETTS		MILNED SPACEPAC CENTER HOUSTON, TEXAS	
DESIGNED BY <i>John H. Dwyer</i> CHECKED BY <i>John H. Dwyer</i> DRAWN BY <i>John H. Dwyer</i> APPROVED BY <i>John H. Dwyer</i>		INSULATOR PHOTOGRAPHIC MASTER ERASABLE DRIVERS BIO - BI MODUL	
RESEA APPROVED BY <i>John H. Dwyer</i> M.I.T.		CODE IDENT NO E	1004247
M.I. APPROVED BY <i>John H. Dwyer</i>		U S S R 1004247	

		UNLESS OTHERWISE SPECIFIED CONTAINERS ARE BY INCHES TO LAMP'S OR FRONT/REAR DECK/AL 5 A
		DO NOT SCALE THIS DRAWING HATCHING
		<b>SEE NOTE 5</b>
1003139	1003486	HEAT TREATMENT
NET ASBY	USED ON	SIGNAL FINISH

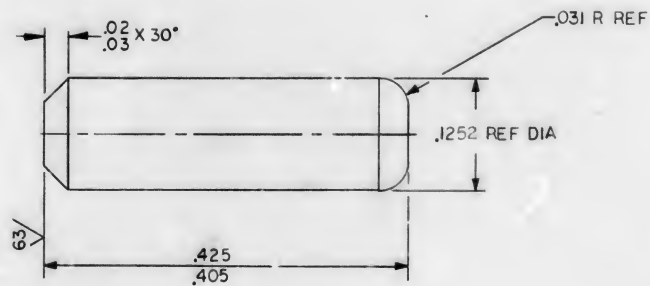


NOTICE - UNLESS GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY DISCLAIMS ANY RESPONSIBILITY FOR ANY CALCULATION, MISINTERPRETATION, AND THE FACT THAT THE GOVERNMENT MAY HAVE PROVIDED, FORWARDED, OR IN ANY MANNER SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER ENDORSING THE HOLDER OR ANY OTHER PERSON, OR CONFIRMING, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE IN ANY MANNER RELATED THERETO.

1004248

REVISIONS 03139

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 03640	10-5-63	W. J. [Signature]



NOTES:-

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: PIN STRAIGHT HEADLESS (DOWEL.) PER MS16555-628
3. FINISH PASSIVATE PER MIL-F-14072 \*E300

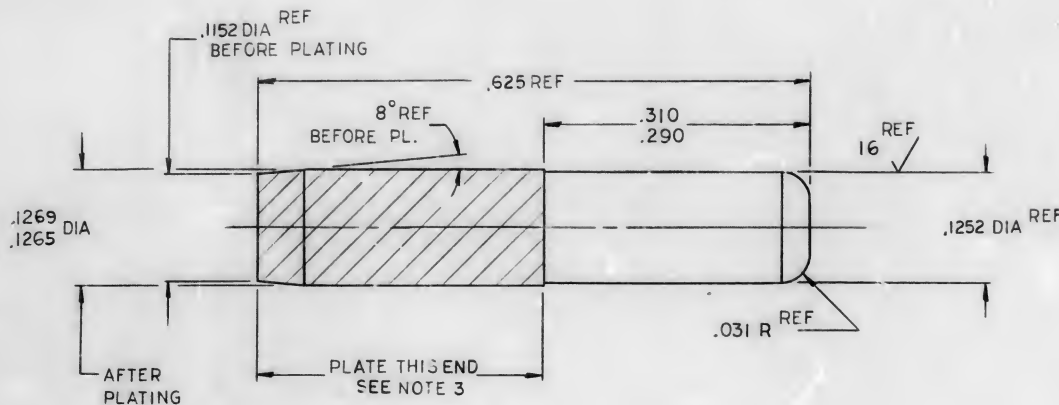
MASTER

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN: [Signature] DATE: 3-9-63				PIN, KEYING			
CHECKED: [Signature] DATE: 10-5-63							
APPROVAL: [Signature] DATE: 10-5-63							
APPROVAL: [Signature]				NASA APPROVAL: [Signature]			
SEE NOTE 2				CODE IDENT NO. — SIZE C			
HEAT TREATMENT				NASA DRAWING NO. 1004248			
FINAL FINISH				SCALE 10/1 WT — SHEET OF			
NEXT ASSY		USED ON		MIT APPROVAL: [Signature]			
APPLICATION		SEE NOTE 3					

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND NO OBLIGATION WHATSOEVER, NOR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PROVIDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS TO BE REGARDED AS IMPLICATION OR ENDORSEMENT AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRM THE RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1004249

REVISIONS 03/39			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DTRR 03628	10-3-63	WR



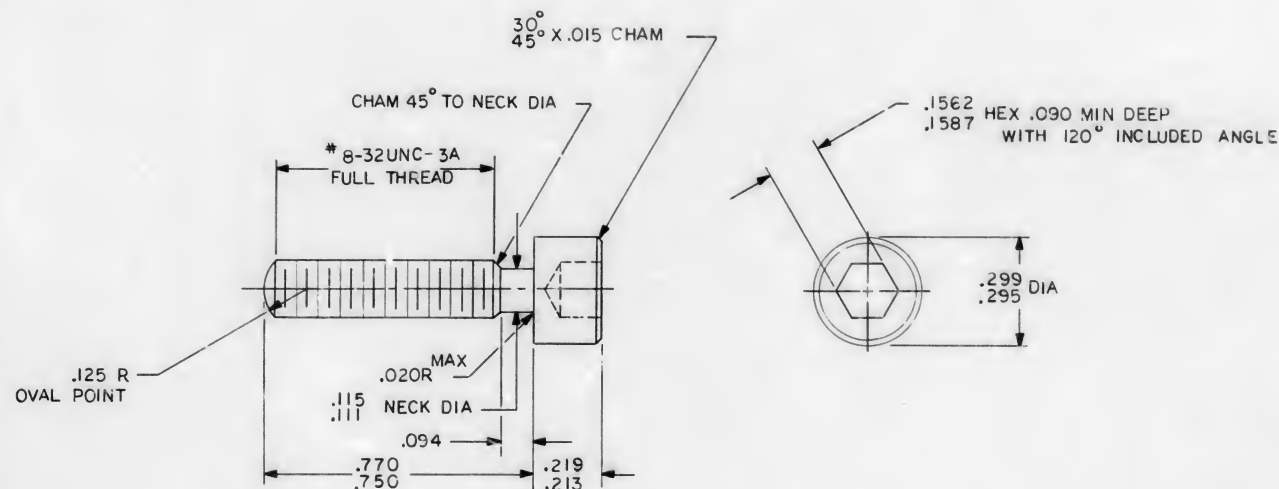
# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATL - PIN, STRAIGHT, HEADLESS (DOWELL) PER MS16555-628
3. ELECTROLESS NICKEL PLATE INDICATED SURFACES PER MIL-C-26074A, CLASS I.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>R. King</i> DATE 8-23-63 CHECKED <i>R. King</i> DATE 11/18/63 APPROVAL <i>W. J. King</i> 10/20/63 MIT APPROVAL <i>W. J. King</i> 12/12/63		PIN, STEP	
NASA APPROVAL <i>W. J. King</i> 12/12/63		CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL <i>W. J. King</i> 12/12/63		SIZE C	1004249
SCALE 10/1		WT	SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE 2		
HEAT TREATMENT		
FINAL FINISH		
NEXT ASSY	USED ON	
APPLICATION		
SEE NOTE 3		

SYM	DESCRIPTION	DATE	APPROVAL
-----	-------------	------	----------



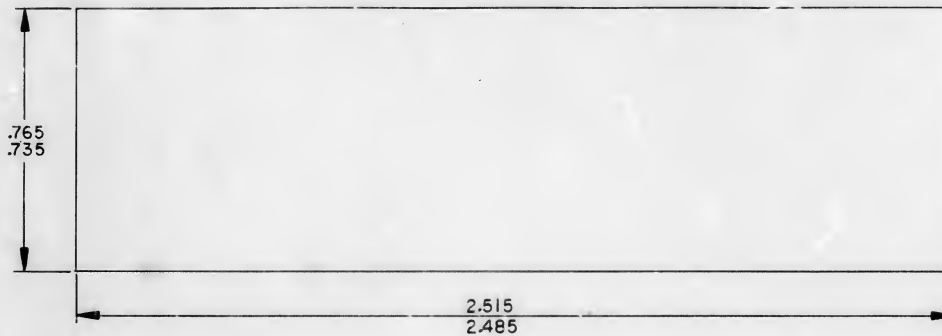
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327
2. MATERIAL-MAKE FOR UNKURLED HEAD SHOULDER SCREW  
PER MS-16637-15 OR 416 CRES PER QQ-S-763
3. FINISH-PASSIVATE PER MIL- F-14072 E300

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWS, NO. CONTRACT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>DWS</i> <i>10 SEP 63</i> CHECKED <i>W. J. ...</i> APPROVAL <i>W. J. ... 10 SEP 63</i> APPROVAL <i>[Signature]</i>		SCREW	
NASA APPROVAL <i>[Signature]</i> <i>9/10/63</i>		CODE IDENT NO.	NASA DRAWING NO. 1004250
MIT APPROVAL <i>W. J. ... 10 SEP 63</i>		SCALE 4/1	WT SHEET OF





NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE-RELATED GOVERNMENT PROGRAM OR OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES, OMISSIONS, OR THE FACT THAT THE GOVERNMENT MAY HAVE INFORMATION, FORMERLY OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE RELEASED BY IMPLICATION OR OTHERWISE TO ANY PERSON LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.



# NOTES

1. MATL: PER MIL-T-11291
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

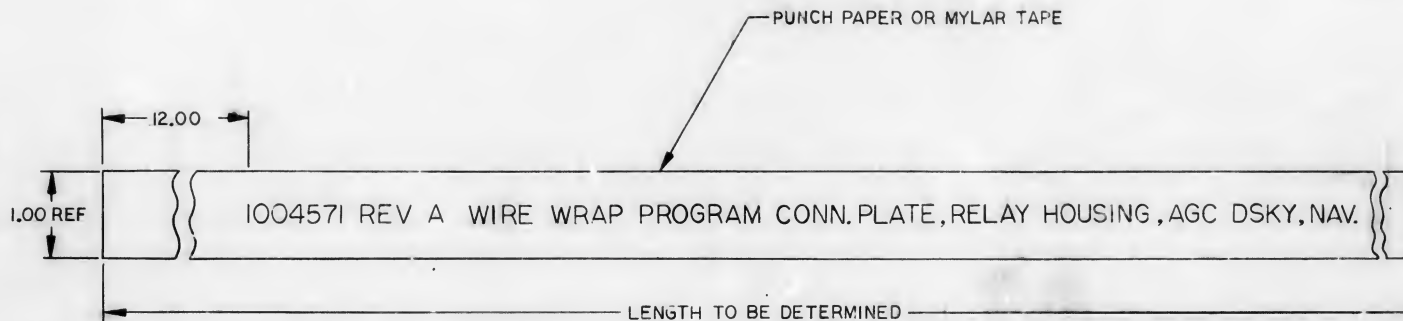
QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DWS. D. CONTRACT				DATE 2 Oct 63			
DRAWN R. E. Sperry				CHECKED R. E. Sperry			
APPROVAL W. B. Jones				APPROVAL R. E. Sperry			
MATERIAL				SEE NOTE 1			
HEAT TREATMENT				NONE			
FINAL FINISH				NONE			
APPLICATION				NONE			
1003526		NEXT ASSY		USED ON		APPLICATION	
1004570		1004570		1004570		1004570	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND NO OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE CONSIDERED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

1004571

REVISIONS 00735

SYM	DESCRIPTION	DATE	APPROVAL
A2	REVISE PER TDRR 06050	2/10/63	DRY JH



# REFERENCES

1. WIRE WRAP ASSY  
1003535
2. INTERCONN DIAGRAM  
1006164

## NOTE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
FRACTIONS	DECIMALS	ANGLES
±	±.10	±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
		FINAL FINISH
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO.		
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>2/10/63</i> DATE <i>2/10/63</i>		WIRE WRAP PROGRAM CONN. PLATE, RELAY HOUSING, AGC DSKY, NAV.			
CHECKED <i>2/10/63</i>					
APPROVAL <i>2/10/63</i>					
NASA APPROVAL <i>2/10/63</i>		CODE IDENT NO.	NASA DRAWING NO.		
MIT APPROVAL <i>2/10/63</i>		SIZE <b>C</b>	1004571		
MIT APPROVAL <i>2/10/63</i>		SCALE 1/1	WT		
		SHEET 1	OF 1		



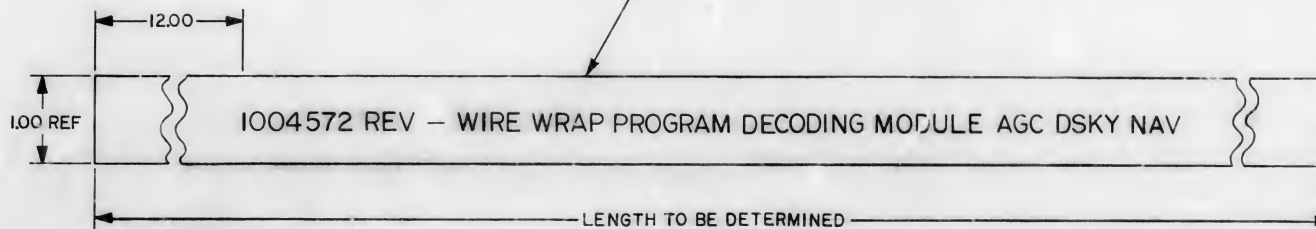
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT INCURS NO RESPONSIBILITY FOR ANY CALIBRATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE IN ANY WAY BE RELATED THEREBY.

1004572

REVISIONS 04735

SYM DESCRIPTION DATE APPROVAL

PUNCH PAPER OR MYLAR TAPE



### REFERENCES

1. WIRE WRAP ASSY  
1003531
2. INTERCONN DIAGRAM  
1006164

### NOTE

1. INTERPRET DRAWING IN ACCORDANCE WITH  
STANDARDS PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
FRACTIONS	DECIMALS	ANGLES
±	±.10	±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

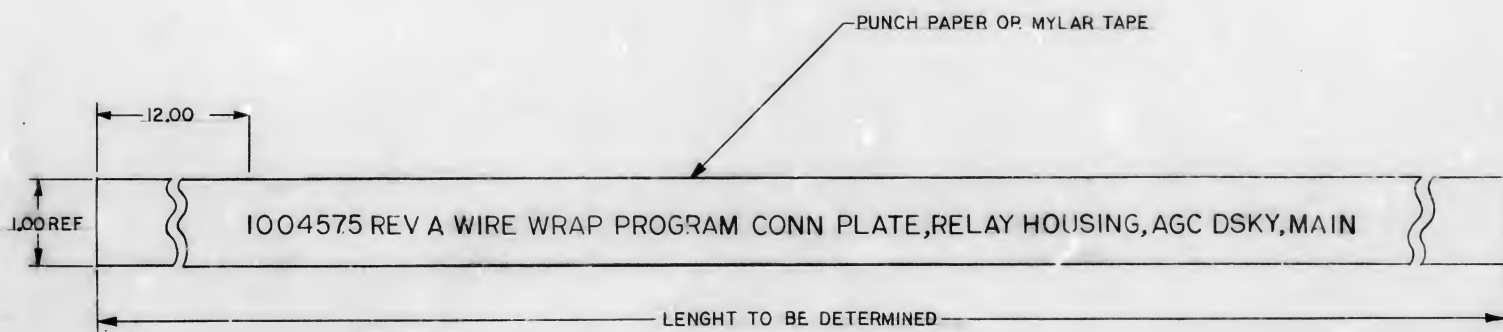
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS. NO. 1004572		WIRE WRAP PROGRAM DECODING MODULE AGC DSKY, NAV	
DRAWN <i>B. B. Brown</i> DATE 14 NOV 63		CODE IDENT NO. SIZE	
CHECKED <i>E. J. Dwyer</i> 14 NOV 63		C 1004572	
APPROVAL <i>E. J. Dwyer</i> 11-18-63		NASA DRAWING NO.	
APPROVAL <i>John C. Hall</i> 15 Nov 63		SCALE 1/1	
NASA APPROVAL <i>[Signature]</i>		WT	
MIT APPROVAL <i>[Signature]</i>		SHEET 1 OF 1	
MIT APPROVAL <i>[Signature]</i> 11/19/63			

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY AIDED TO GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICALLY OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1004575 A

REVISIONS 04135

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05187	12/20/63	W/N



NOTE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REFERENCES

1. WIRE WRAP ASSY 1003544
2. INTERCONN DIAGRAM 1006165

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
		FRACTIONS DECIMALS ANGLES ± ±.10 ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
		FINAL FINISH
NEXT ASSY	USED ON	
APPLICATION		

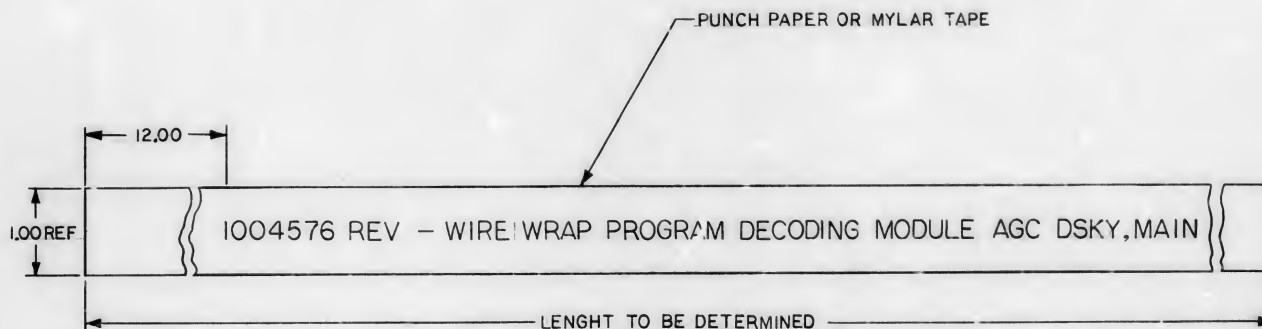
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DES. NO. CONTRACT DRAWN <i>P. J. [signature]</i> DATE <i>5/20/63</i> CHECKED <i>L. [signature]</i> <i>12/20/63</i> APPROVAL <i>P. J. [signature]</i> <i>11-18-63</i> APPROVAL <i>E. [signature]</i> <i>15 Nov 63</i>		WIRE WRAP PROGRAM CONN. PLATE, RELAY HOUSING, AGC DSKY, MAIN	
NASA APPROVAL <i>[signature]</i> MIT APPROVAL <i>[signature]</i> MIT APPROVAL <i>L. [signature]</i> <i>11/19/63</i>		CODE IDENT NO. SIZE C	NASA DRAWING NO 1004575
SCALE 1/1		WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PURCHASE OR OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

1004576

REVISIONS 04835

SYM DESCRIPTION DATE APPROVAL



NOTE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

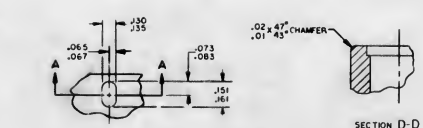
REFERENCES

1. WIRE WRAP ASSY 1003547
2. INTERCONN DIAGRAM 1006165

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>[Signature]</i> DATE <i>4/11/63</i> CHECKED <i>[Signature]</i> DATE <i>4/11/63</i> APPROVAL <i>[Signature]</i> DATE <i>4/11/63</i> APPROVAL <i>[Signature]</i> DATE <i>4/11/63</i>		WIRE WRAP PROGRAM DECODING MODULE, AGC DSKY, MAIN	
NASA APPROVAL <i>[Signature]</i> MIT APPROVAL <i>[Signature]</i> MIT APPROVAL <i>[Signature]</i>		CODE IDENT NO. <b>C</b> SCALE 1/1 WT	NASA DRAWING NO. 1004576 SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± .10 ± DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINAL FINISH	NEXT ASSY USED ON APPLICATION
--	-------------------------------------





SECTION A-A

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ON DECIMALS ON
		DO NOT SCALE THIS DRAWING MATERIAL
		SEE NOTE 1
1003532	1003524	HEAT TREATING
NEXT ASBY	USED ON	FULL FINISH
APPLICATION		SEE NOTE 3

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A CONTRACT, THE USER ASSUMES ALL LIABILITY FOR ANY INADEQUACIES, OMISSIONS, OR ERRORS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITIONS OF ALL GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITIONS OF ALL GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITIONS OF ALL GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA.

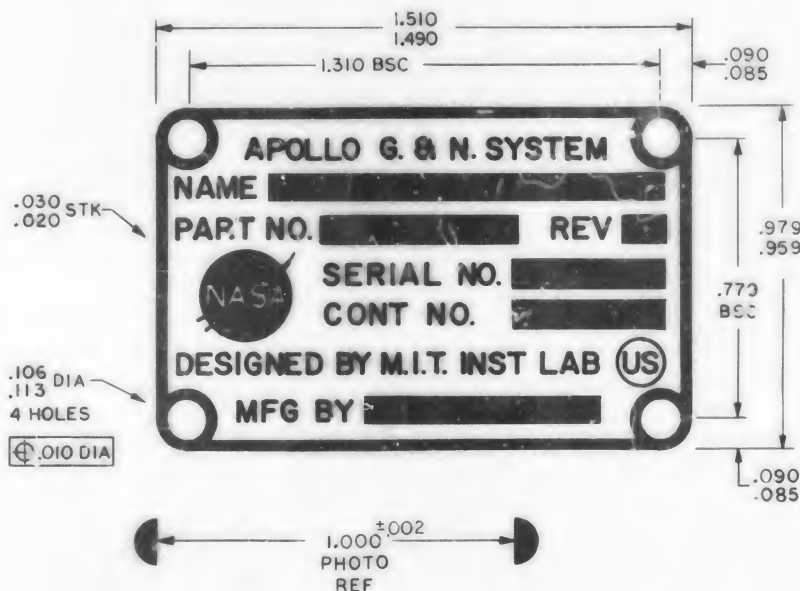
REVISIONS 07837

SYM

DESCRIPTION

DATE

APPROVED



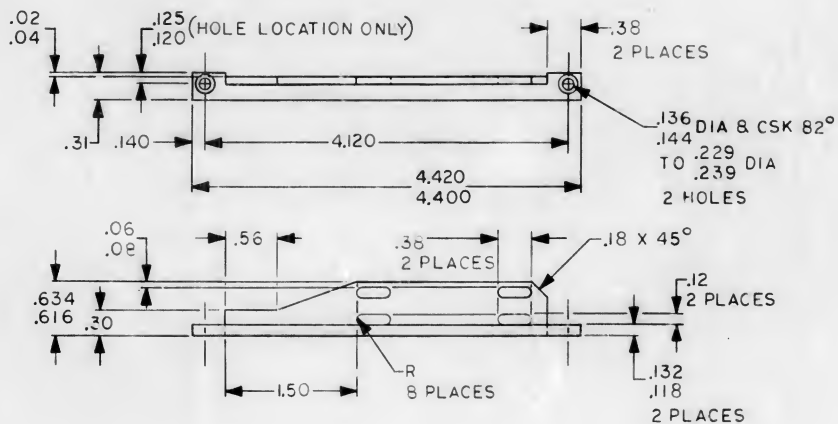
## NOTES

1. MAT: AL SH, 1100 TEMPER O, ALT SPEC QQ-A-561, TEMPER O
2. PLATE MUST CONFORM TO REQUIREMENTS AS OUTLINED IN MIL-P-15024, TYPE A OR TYPE H
3. ANODIZE PER MIL-A-8625, TYPE 2, EXCEPT EDGES
4. BACKGROUND TO BE BLACK; MARKING AND LETTERING TO BE NATURAL METAL
5. IDENTIFY USING DRAWING NO., REV LETTER, AND MANUFACTURER'S SYMBOL PER MIL-STD-130 ON BACK OF PLATE
6. THE ORIGINAL OF THIS DRAWING OR ANY REPRODUCTION THEREOF SHALL BE MADE BY A METHOD OR PROCESS WHICH WILL INSURE DIMENSIONAL STABILITY

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		FRACTIONS DECIMALS ANGLES
		± ± ±
1003186		DO NOT SCALE THIS DRAWING
1003540		MATERIAL
1003524		SEE NOTE 1
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Condon</i> DATE <i>4/26/64</i>		PLATE, IDENTIFICATION	
CHECKED <i>John Adams</i> DATE <i>12/1/64</i>			
APPROVAL			
APPROVAL <i>Edwin C. H. 4/26/64</i>			
NASA APPROVAL <i>W. R. 4/26/64</i>		CODE IDENT NO.	SIZE
MIT APPROVAL		C	C
MIT APPROVAL <i>W. R. 4/26/64</i>		SCALE 4/1	WT
		NASA DRAWING NO. 1004628	
		SHEET 1 OF 1	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ACCEPTS NO RESPONSIBILITY FOR ANY CLAIMS FOR INADEQUACIES, AND THE FACT THAT THE GOVERNMENT HAS FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE DATA DOES NOT CONSTITUTE AN ENDORSEMENT, OR NOT TO BE DECEASED BY IMPLICATION, OR OTHERWISE AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.



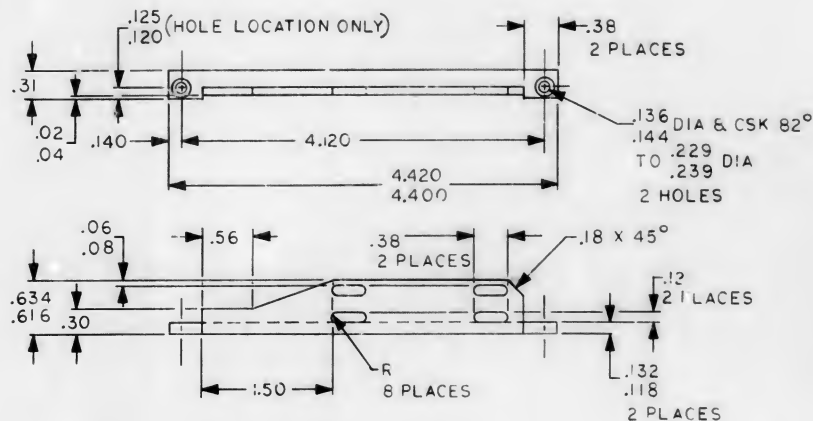
# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: 6063-T5 EXTRUDED AL ANGLE PER QQ-A-274, TEMPER T5
3. ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.
LIST OF MATERIALS						
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS				MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>R. Dominguez</i> DATE <i>6/18/64</i>				RETAINER, EL HOLD DOWN		
CHECKED <i>R. B. Brown</i> DATE <i>29 APR 64</i>				RH		
APPROVAL <i>[Signature]</i>				AGC DSKY, NAV		
APPROVAL <i>[Signature]</i>						
1003458		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± .005 ± 1° ± .02 DQ NOT SCALE THIS DRAWING		NASA APPROVAL <i>[Signature]</i> DATE <i>5-12-64</i>		CODE IDENT NO. SIZE
1003524		MATERIAL SEE NOTE 2		MIT APPROVAL <i>[Signature]</i>		NASA DRAWING NO.
NEXT ASSY USED ON		HEAT TREATMENT NONE		MIT APPROVAL		1004635
APPLICATION		FINAL FINISH SEE NOTE 3		SCALE 1/1 WT		SHEET 1 OF 1



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



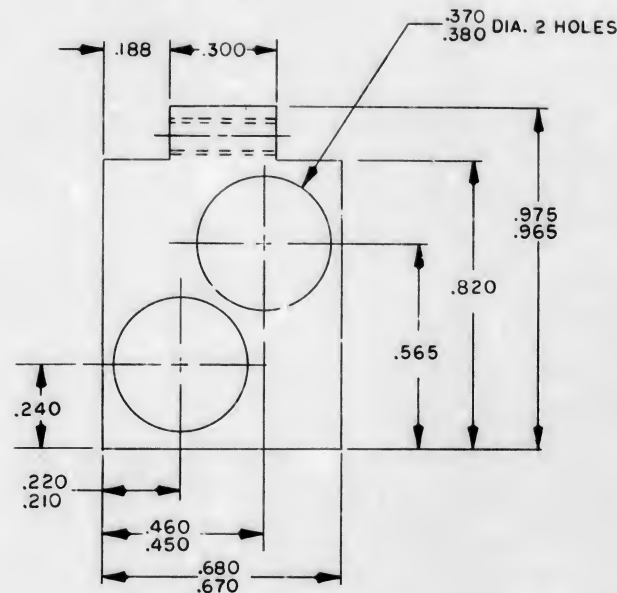
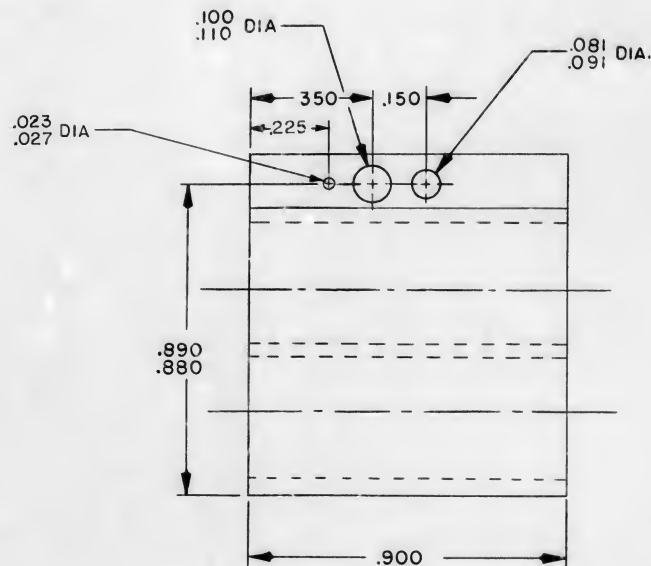
# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: 6063-T5 EXTRUDED AL ANGLE PER QQ-A-274, TEMPER T5
3. ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>P. D. Jones</i> DATE 29 APR 64 CHECKED <i>H. B. Jones</i> 29 APR 64 APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>		RETAINER EL HOLD DOWN LH AGC DSKY, NAV	
NASA APPROVAL <i>[Signature]</i> 5-12-64 MIT APPROVAL <i>[Signature]</i> 5-12-64 MIT APPROVAL		CODE IDENT NO. <b>C</b> SCALE 1/1	NASA DRAWING NO. 1004636 SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
FRACTIONS	DECIMALS ANGLES
±	±.005 ± 1°
DO NOT SCALE THIS DRAWING	
MATERIAL	
1003458	SEE NOTE 2
1003524	HEAT TREATMENT NONE
NEXT ASSY	USED ON
FINAL FINISH	
SEE NOTE 3	
APPLICATION	

NOTES: - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY IDENTIFIED GOVERNMENT PROCUREMENT, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND ANY ORALATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FURNISHED, FURNISHED, OR MAY BE SUPPLYING THE DATA, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE CONSIDERED AN IMPLICATION OR ENDORSEMENT AS IN ANY MANNER LIMITING THE RIGHTS OF ANY OTHER PERSON OR ORGANIZATION, OR CONVEYING ANY RIGHTS OR PERMISSIONS TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE OR MAY BE DELAYED THEREBY.



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L: PLASTIC ACRYLIC PER MIL-P-5425 FINISH B ALT; MIL-P-8184 FINISH B
3. BREAK SHARP EDGES

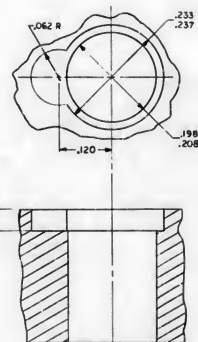
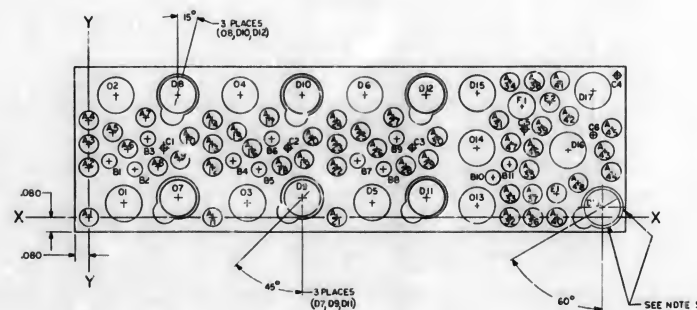
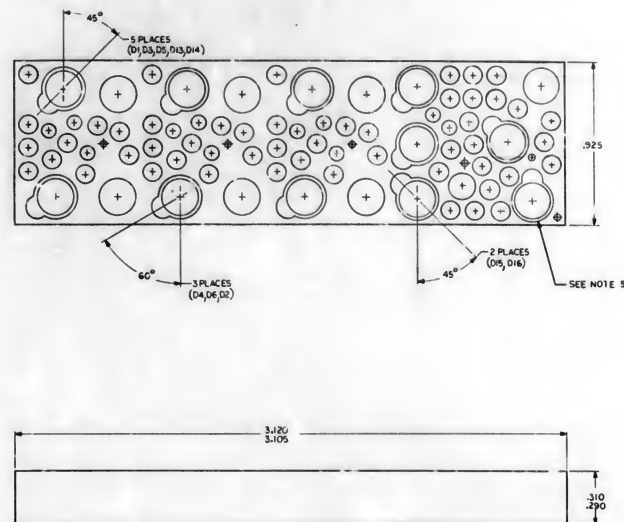
⊖ REPLACES 1004283 AFTER SYSTEM NO. 20 WITH CHANGES

QTY REQ		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>B. Edwards</i> DATE <i>5-10-62</i>				HOLDER, COMPONENT STRAND GATE MODULE			
CHECKED <i>R. Edwards</i> DATE <i>1-2-63</i>							
APPROVAL <i>MIT</i> DATE <i>1-2-63</i>							
APPROVAL <i>E. J. Dwyer</i> DATE <i>3/1/62</i>				NASA DRAWING NO. 1004645			
NASA APPROVAL <i>W. J. L. 7/1/62</i>				CODE IDENT NO.		SIZE C	
MIT APPROVAL <i>D. Valgel</i> DATE <i>9/1/62</i>				SCALE 4/1		WT	
APPLICATION				SHEET		OF	

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-0-70327  
2. MATERIAL: PLASTIC ACRYLIC PER MIL-P-5425, FINISH B ALT. MIL-P-B184 FINISH B  
3. TRUE POSITIONING AS SHOWN IN CHART  
4. BREAK ALL SHARP EDGES  
5. BREAKOUT ALLOWED BETWEEN COUNTERBORE OF HOLES D17 AND D18 7/40  
EDGE OF BLOCK

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	DIA	HOLE DIA	QTY
A1	.000	.000			
A2	.000	.000			
A3	.000	.000			
A4	.000	.000			
A5	.000	.000			
A6	.000	.000			
A7	.000	.000			
A8	.000	.000			
A9	.000	.000			
A10	.000	.000			
A11	.000	.000			
A12	.000	.000			
A13	.000	.000			
A14	.000	.000			
A15	.000	.000			
A16	.000	.000			
A17	.000	.000			
A18	.000	.000			
A19	.000	.000			
A20	.000	.000			
A21	.000	.000			
A22	.000	.000			
A23	.000	.000			
A24	.000	.000			
A25	.000	.000			
A26	.000	.000			
A27	.000	.000			
A28	.000	.000			
A29	.000	.000			
A30	.000	.000			
A31	.000	.000			
A32	.000	.000			
A33	.000	.000			
A34	.000	.000			
A35	.000	.000			
A36	.000	.000			
A37	.000	.000			
A38	.000	.000			
A39	.000	.000			
A40	.000	.000			
A41	.000	.000			
A42	.000	.000			
A43	.000	.000			
A44	.000	.000			
A45	.000	.000			
A46	.000	.000			
A47	.000	.000			
A48	.000	.000			
B1	.000	.000			
B2	.000	.000			
B3	.000	.000			
B4	.000	.000			
B5	.000	.000			
B6	.000	.000			
B7	.000	.000			
B8	.000	.000			
B9	.000	.000			
B10	.000	.000			
B11	.000	.000			

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	DIA	HOLE DIA	QTY
C1	.425	.390			
C2	1.125	.390			
C3	1.825	.390			
C4	2.930	.800			
C5	2.455	.495			
C6	2.840	.465			
D1	.195	.080			
D2	.155	.685			
D3	.895	.060			
D4	.855	.685			
D5	1.555	.080			
D6	1.555	.685			
D7	.505	.110			
D8	.505	.685			
D9	1.705	.110			
D10	1.705	.685			
D11	1.905	.110			
D12	1.905	.685			
D13	2.190	.065			
D14	2.190	.385			
D15	2.190	.700			
D16	2.705	.375			
D17	2.845	.710			
D18	2.895	.025			
E1	2.640	.135			
E2	2.600	.645			
F1	2.440	.625			



DETAIL A  
SCALE 10/1  
Ø HOLES, 18 PLACES  
SEE TOP AND BOTTOM VIEWS FOR TAB ORIENTATION

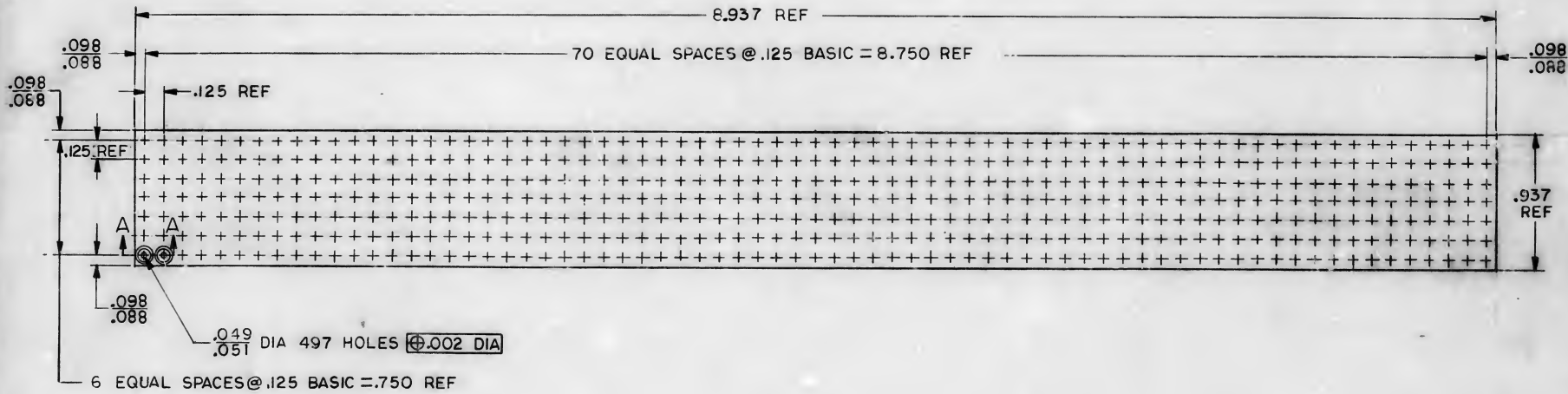
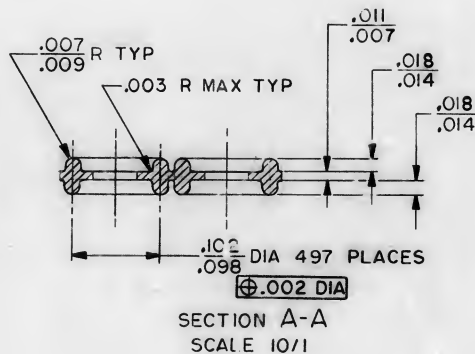
REPLACES 1004264 AFTER SYST  
NO. 20 WITH CHANGES

QTY	PART OR IDENTIFYING NO	NONNOMENCLATURE OR DESCRIPTION	FIG NO
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + .005 - .005 Ø7 NOT SCALE THIS DRAWING MATERIAL SEE NOTE 2			
DRAWN BY: <i>[Signature]</i> DATE: <i>[Date]</i>		APPROVED BY: <i>[Signature]</i> DATE: <i>[Date]</i>	
NEXT ASSY USED ON		FINAL FINISH	
APPLICATION		REMARKS	
100471		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
CODE IDENT NO		SCALE 4/1	
SIZE E		MATERIAL 1004646	
NET APPROVAL		SHEET 1 OF 1	





NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FORWARDED, OR SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



# NOTES

1. MATL: RUBBER, SILICONE (GE-5211) PER MIL-R-5847D, CLASS III, 20-25 DURO
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. THE GASKET SHALL NOT EXHIBIT ANY VOIDS OR MARS AT THE TOP PERIPHERY OF THE RINGS
4. NO AIR BUBBLES OR BLOW HOLES SHALL BE PRESENT IN THE BODY OF THE RINGS

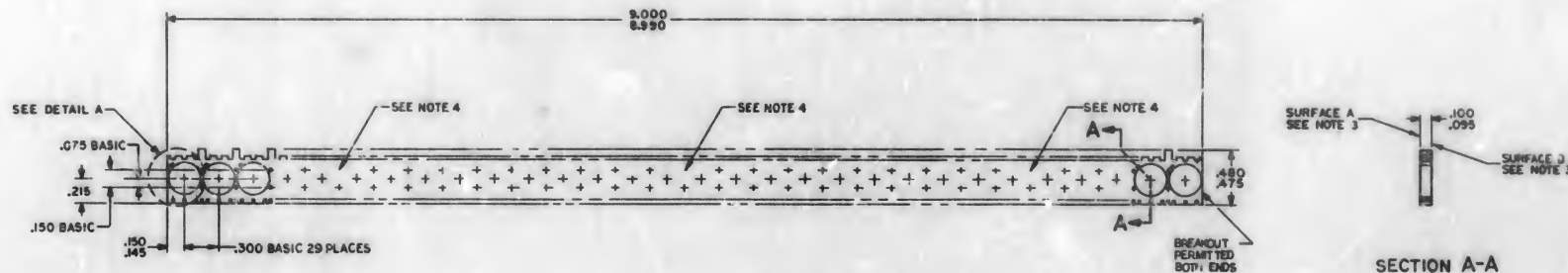
MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		FRACTIONS DECIMALS ANGLES
		± ± ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE 1
		HEAT TREATMENT
		NONE
		FINAL FINISH
		NONE
NEXT ASSY	USED ON	
		APPLICATION

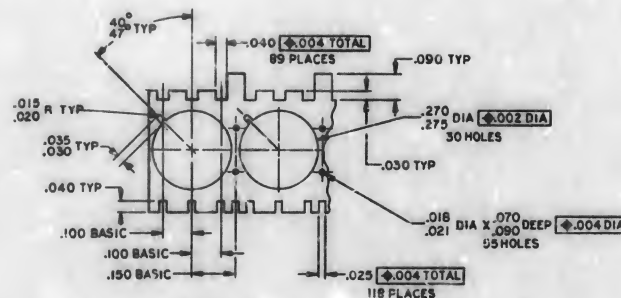
QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>[Signature]</i> DATE <i>9/1/64</i>		GASKET, UNIVERSAL	
CHECKED <i>[Signature]</i> DATE <i>9/1/64</i>			
APPROVAL <i>[Signature]</i> DATE <i>11/24/64</i>			
NASA APPROVAL <i>[Signature]</i> DATE <i>9/1/64</i>		CODE IDENT NO	SIZE
MIT APPROVAL <i>[Signature]</i> DATE <i>9/1/64</i>			C
MIT APPROVAL <i>[Signature]</i> DATE <i>9/1/64</i>		SCALE 2/1	WT
		SHEET	OF 1

NASA DRAWING NO.  
1004651

QTY	DESCRIPTION	DATE	APPROVAL
-	ORIGINATED AND RELEASED PER TORR	12-8-52	W.R.



SECTION A-A



DETAIL A  
SCALE 5/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAT'L: PLASTIC PER MIL-P-18177, TYPE GEB
3. SURFACES A AND B TO BE DULL FINISH
4. NO .015 HOLES AT THESE LOCATIONS
5. NO BREAKOUTS PERMITTED UNLESS WHERE INDICATED

QTY REQD	PART OR IDENTIFYING NO.	NAME/INITIALS OR DESCRIPTION	PRD NO.
LIST OF MATERIALS			
MILITARY INSTRUMENTATION LAB. Houston, Texas		MANNED SPACECRAFT CENTER Houston, Texas	
FIG. 10		HOUSING MICRO LOGIC TO 47	
DRAWN: <i>W.R.</i> DATE: <i>12-8-52</i>		CHECKED: <i>W.R.</i> DATE: <i>12-8-52</i>	
DO NOT SCALE THIS DRAWING		APPROVAL: <i>W.R.</i> DATE: <i>12-8-52</i>	
SEE NOTE 2		NASA APPROVAL: <i>W.R.</i> DATE: <i>12-8-52</i>	
HEAT TREATMENT: <i>---</i>		NASA DRAWING NO. <b>D 1004658</b>	
NEXT ASSY: <i>---</i>		SCALE: 2/1	
FINAL TEST: <i>---</i>		MFG APPROVAL: <i>W.R.</i> DATE: <i>12-8-52</i>	
APPLICATION		MFG NO. 1 OF 1	

1004658

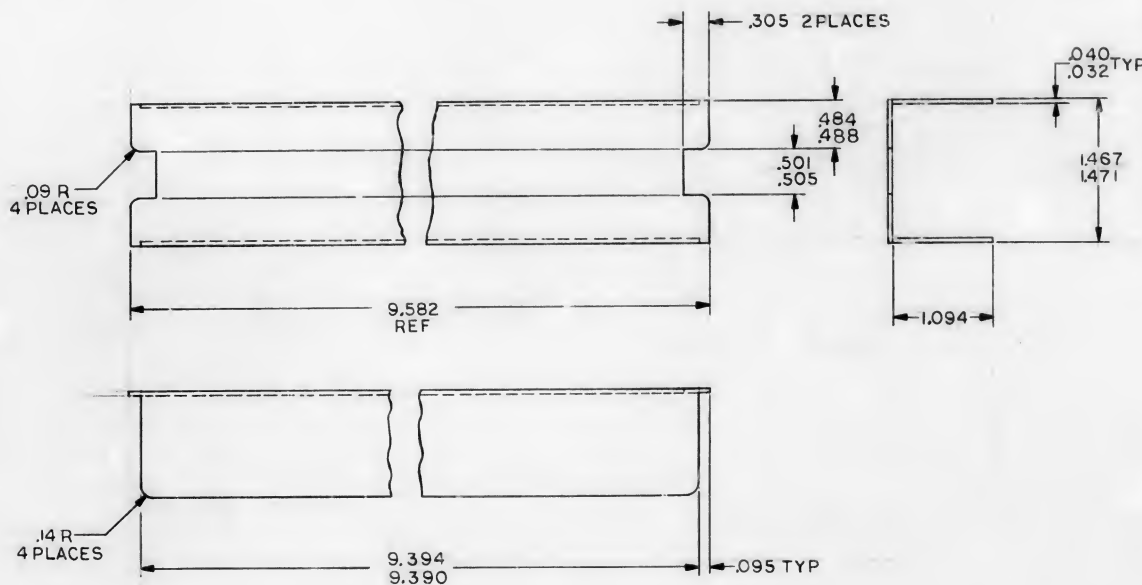


NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY INACCURACY, OMISSION, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER ENDORSING THE RESULTS OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1004664

REVISIONS *TDRK 14465*

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES

1. MATERIAL: PLASTIC, THERMOSETTING PER MIL-P-18177 TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>R. Harmon</i>	5/10/64	COVER, ROPE. MEMORY		
CHECKED <i>R. Edwards</i>	11/14/64	APOLLO GUIDANCE COMPUTER		
APPROVED <i>RT Martin</i>	12-1-64			
APPROVED <i>Eden C. Hall</i>	13 Mar 65			
APPROVED MIT <i>L. Kugel</i>	11/24/64	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>W. M. L.</i>	1/14/65		C	1004664
DATE		SCALE 1/1	SHEET 1 OF 1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm .005$ DO NOT SCALE THIS DRAWING	
1003133	SEE NOTE 1
NEXT ASSY	USED ON
APPLICATION	

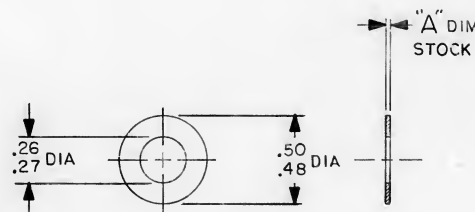
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1004665

REVISIONS

14664

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



PART NO.	"A" DIM
— 001	.003
— 002	.005
— 003	.010

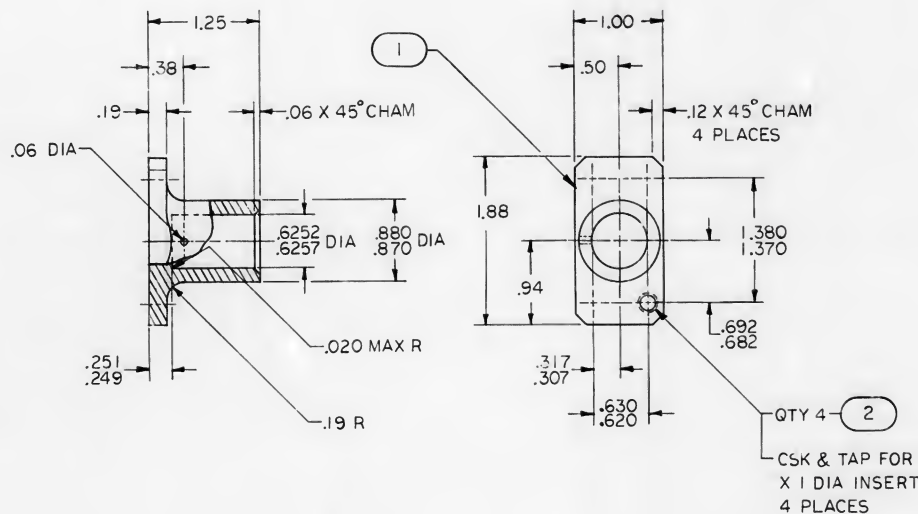
# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: AL 6061-T6 PEP QQ-A-250/11b, TEMP T6
3. REMOVE BURRS AND SHARP EDGES
4. BLACK ANODIZE PER MIL-A-8625, TYPE II
5. IDENTIFY PER ND1002019

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ — $\pm$ — $\pm$ — DO NOT SCALE THIS DRAWING
		MATERIAL
1003706		SEE NOTE 2
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Jackson</i>	12 NOV 64	SHIM		
CHECKED <i>A. R. Bogan</i>	16 NOV 64	AGC NAV & MAIN DSKY		
APPROVED <i>A. R. Bogan</i>	16 NOV 64			
APPROVED <i>Edna C. Hall</i>	4 DEC 64			
APPROVED MIT <i>W. K. Roper</i>	8 DEC 64	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>W. J. Rhine</i>	12 DEC 64		C	1004665
	DATE	SCALE 2/1		SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.



#### NOTES

1. MATL. 2024-T4 AL PER QQ-A-268 TEMP T4
2. REMOVE BURRS & SHARP EDGES
3. COAT THREADS OF FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER COLOR Y
4. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
5. INSTALL FIND NO. 2 PER MS33646 AFTER ANODIZING
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1003706	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
CAPACITOR VALUES ARE IN  $\mu$ f  
RESISTOR VALUES ARE IN OHMS  
TOLERANCES ON  
FRACTIONS DECIMALS ANGLES  
 $\pm$  .01  $\pm$  2°  
DO NOT SCALE THIS DRAWING

MATERIAL

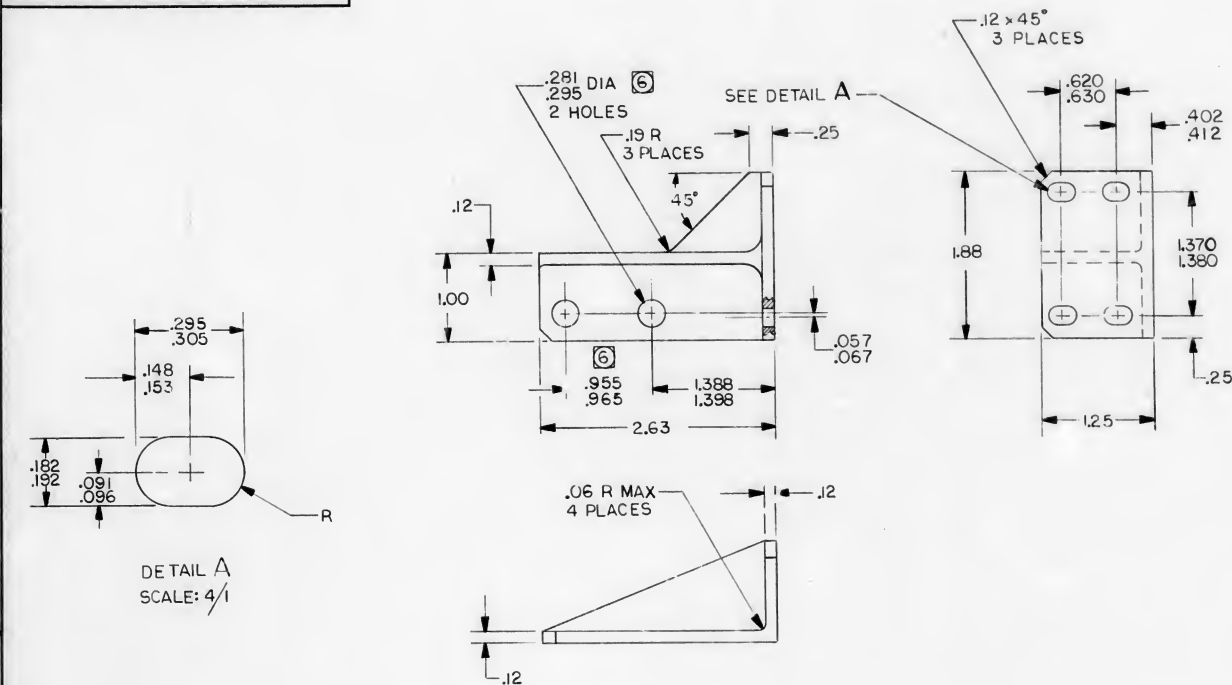
4	MS 21208-C0810	INSERT, FREE RUNNING	2
1	1004669-001	FLANGE	1
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION
-011	LIST OF MATERIALS		
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN	B. J. J. J.	12 NOV 64	
CHECKED	G. B. J. J.	13 NOV 64	
APPROVED	J. J. J. J.	14 NOV 64	
APPROVED	J. J. J. J.	15 NOV 64	
APPROVED	W. K. J. J.	16 NOV 64	
APPROVED	W. K. J. J.	17 NOV 64	
APPROVED	W. K. J. J.	18 NOV 64	
APPROVED	W. K. J. J.	19 NOV 64	
APPROVED	W. K. J. J.	20 NOV 64	
APPROVED	W. K. J. J.	21 NOV 64	
APPROVED	W. K. J. J.	22 NOV 64	
APPROVED	W. K. J. J.	23 NOV 64	
APPROVED	W. K. J. J.	24 NOV 64	
APPROVED	W. K. J. J.	25 NOV 64	
APPROVED	W. K. J. J.	26 NOV 64	
APPROVED	W. K. J. J.	27 NOV 64	
APPROVED	W. K. J. J.	28 NOV 64	
APPROVED	W. K. J. J.	29 NOV 64	
APPROVED	W. K. J. J.	30 NOV 64	
APPROVED	W. K. J. J.	31 NOV 64	
APPROVED	W. K. J. J.	32 NOV 64	
APPROVED	W. K. J. J.	33 NOV 64	
APPROVED	W. K. J. J.	34 NOV 64	
APPROVED	W. K. J. J.	35 NOV 64	
APPROVED	W. K. J. J.	36 NOV 64	
APPROVED	W. K. J. J.	37 NOV 64	
APPROVED	W. K. J. J.	38 NOV 64	
APPROVED	W. K. J. J.	39 NOV 64	
APPROVED	W. K. J. J.	40 NOV 64	
APPROVED	W. K. J. J.	41 NOV 64	
APPROVED	W. K. J. J.	42 NOV 64	
APPROVED	W. K. J. J.	43 NOV 64	
APPROVED	W. K. J. J.	44 NOV 64	
APPROVED	W. K. J. J.	45 NOV 64	
APPROVED	W. K. J. J.	46 NOV 64	
APPROVED	W. K. J. J.	47 NOV 64	
APPROVED	W. K. J. J.	48 NOV 64	
APPROVED	W. K. J. J.	49 NOV 64	
APPROVED	W. K. J. J.	50 NOV 64	
APPROVED	W. K. J. J.	51 NOV 64	
APPROVED	W. K. J. J.	52 NOV 64	
APPROVED	W. K. J. J.	53 NOV 64	
APPROVED	W. K. J. J.	54 NOV 64	
APPROVED	W. K. J. J.	55 NOV 64	
APPROVED	W. K. J. J.	56 NOV 64	
APPROVED	W. K. J. J.	57 NOV 64	
APPROVED	W. K. J. J.	58 NOV 64	
APPROVED	W. K. J. J.	59 NOV 64	
APPROVED	W. K. J. J.	60 NOV 64	
APPROVED	W. K. J. J.	61 NOV 64	
APPROVED	W. K. J. J.	62 NOV 64	
APPROVED	W. K. J. J.	63 NOV 64	
APPROVED	W. K. J. J.	64 NOV 64	
APPROVED	W. K. J. J.	65 NOV 64	
APPROVED	W. K. J. J.	66 NOV 64	
APPROVED	W. K. J. J.	67 NOV 64	
APPROVED	W. K. J. J.	68 NOV 64	
APPROVED	W. K. J. J.	69 NOV 64	
APPROVED	W. K. J. J.	70 NOV 64	
APPROVED	W. K. J. J.	71 NOV 64	
APPROVED	W. K. J. J.	72 NOV 64	
APPROVED	W. K. J. J.	73 NOV 64	
APPROVED	W. K. J. J.	74 NOV 64	
APPROVED	W. K. J. J.	75 NOV 64	
APPROVED	W. K. J. J.	76 NOV 64	
APPROVED	W. K. J. J.	77 NOV 64	
APPROVED	W. K. J. J.	78 NOV 64	
APPROVED	W. K. J. J.	79 NOV 64	
APPROVED	W. K. J. J.	80 NOV 64	
APPROVED	W. K. J. J.	81 NOV 64	
APPROVED	W. K. J. J.	82 NOV 64	
APPROVED	W. K. J. J.	83 NOV 64	
APPROVED	W. K. J. J.	84 NOV 64	
APPROVED	W. K. J. J.	85 NOV 64	
APPROVED	W. K. J. J.	86 NOV 64	
APPROVED	W. K. J. J.	87 NOV 64	
APPROVED	W. K. J. J.	88 NOV 64	
APPROVED	W. K. J. J.	89 NOV 64	
APPROVED	W. K. J. J.	90 NOV 64	
APPROVED	W. K. J. J.	91 NOV 64	
APPROVED	W. K. J. J.	92 NOV 64	
APPROVED	W. K. J. J.	93 NOV 64	
APPROVED	W. K. J. J.	94 NOV 64	
APPROVED	W. K. J. J.	95 NOV 64	
APPROVED	W. K. J. J.	96 NOV 64	
APPROVED	W. K. J. J.	97 NOV 64	
APPROVED	W. K. J. J.	98 NOV 64	
APPROVED	W. K. J. J.	99 NOV 64	
APPROVED	W. K. J. J.	100 NOV 64	

FLANGE  
AGC NAV DSKY

CODE IDENT NO.	SIZE	DRAWING NO.
	C	1004669
SCALE	1/1	SHEET 1 OF 1



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS AN ART HANDED LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.



# NOTES:

1. MATL: AL 2024-T4 PER QQ-A-268, TEMPER T4
2. REMOVE BURRS AND SHARP EDGES
3. BLACK ANODIZE PER MIL-A-8625 TYPE II
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. SURFACE QUALITY TO BE 125
6. THIS DIMENSION IS CONTROLLED BY ICD MH01-01004-116
7. IDENTIFY PER NDI002019

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ $\pm$ .01 $\pm$ 2° DO NOT SCALE THIS DRAWING
1003706		MATERIAL
NEXT ISSY	USED ON	SEE NOTE 1
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	John Manning	13 NOV 64	BRACKET, ANGLE AGC NAV, DSKY	
CHECKED	Arthur Regan	13 NOV 64		
APPROVED	B. J. Landon	16 NOV 64		
APPROVED	Ellen C. Hall	1 DEC 64		
APPROVED	W. J. Rhine	12 DEC 64	CODE 1-ENT NO.	SIZE
APPROVED	W. J. Rhine	12 DEC 64	SCALE 1/1	DRAWING NO. 1004670
DATE	SCALE 1/1	SHEET 1	OF 1	

1004670

REVISIONS

4666

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	A"PROVED
-----	------	-------------	----	-----	------	----------



1. MATERIAL MAKE FROM DWG NO. 1004561
2. SURFACES MARKED ✓ TO BE 125✓
3. REMOVE BURRS AND SHARP EDGES
4. ANODIZE PER MIL-A-5625, TYPE I, DYE BLACK
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

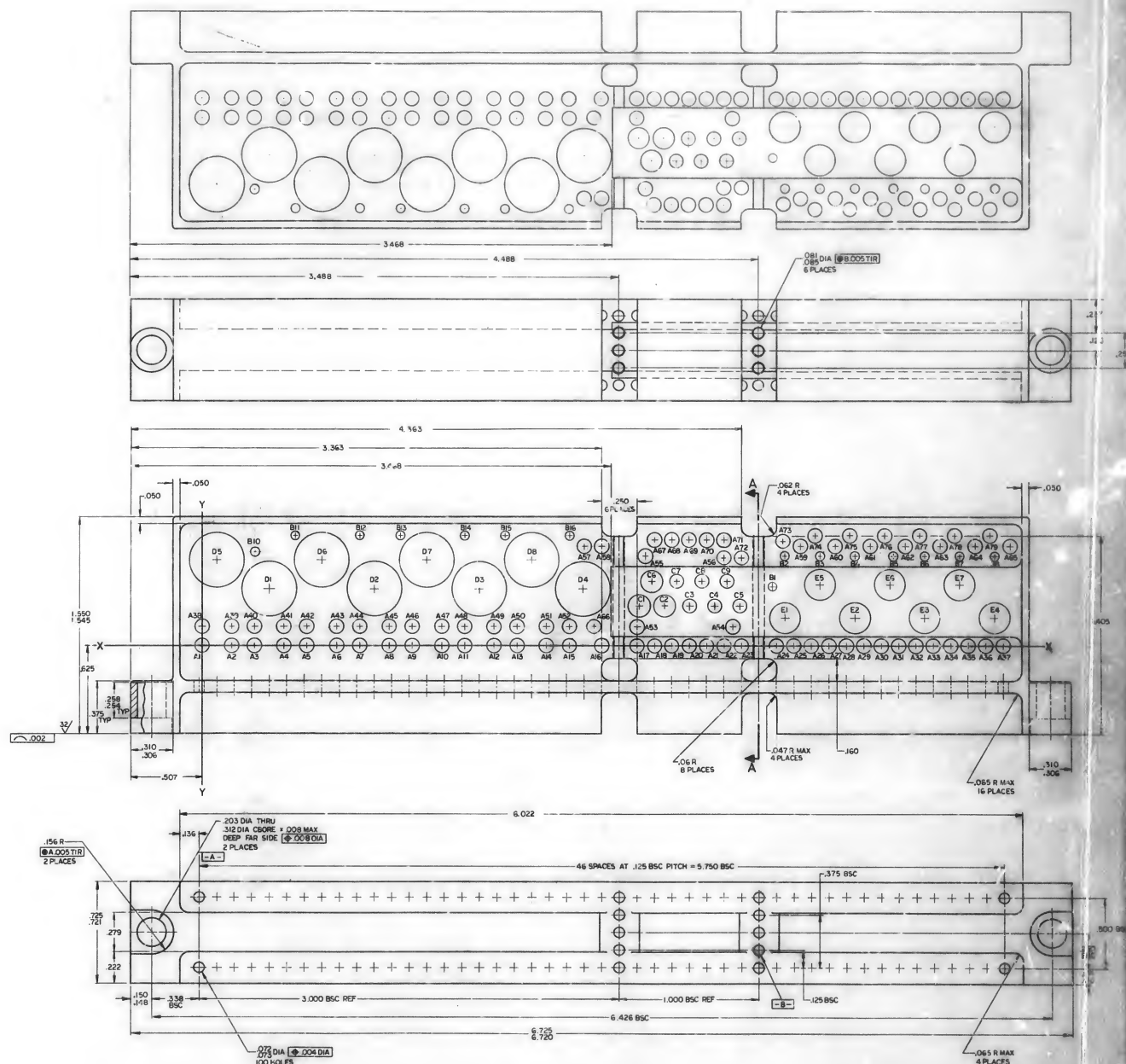
[illegible]

[illegible]





HOLE IDENT	X DIM.	Y DIM.	HOLE DIA.	QTY
B1	4.081	.420		
B2	4.167	.640		
B3	4.417			
B4	5.567			
B5	3.317			
B6	5.167			
B7	5.417			
B8	5.667		.068 C57	15
B10	.375	.670		
B12	1.125	.785		
B13	1.415			
B14	1.875			
B15	2.165			
B16	2.665			
C1	3.124	.295		
C7	3.302		.153/.157	2
C8	3.480			
C4	3.480		.092 +.006	3
C9	3.836			
C6	3.610	.460	.153/.157	1
C5	3.610		.096	3
C8	3.570			
C9	3.750			
D1	.480	.405		
D2	1.230			
D3	1.980			
D4	2.730		.384 +.008	2
D6	.105	.610		
D7	.655			
D7	1.605			
D8	2.355			
E1	4.167	.200		
E2	4.667			
E3	5.667		.218 +.022	7
E4	5.667			
E5	4.417	.435		
E6	4.917			
E7	5.417			



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATL: MAG ALLOY ZK60A-75 PER Q-M-31
  3. 125 ALL OVER UNLESS OTHERWISE SPECIFIED
  4. ALL FILLETS & RADII TO BE .005/.025 UNLESS OTHERWISE SPECIFIED
  5. REMOVE BURRS & BREAK SHARP EDGES .005/.015
  6. ANODIZE PER MIL-M-45202, TYPE I, CLASS C
  7. IDENTIFY PER NDI002019

1004701

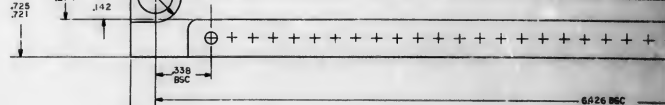
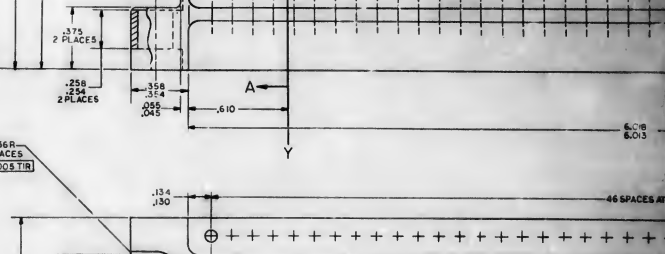
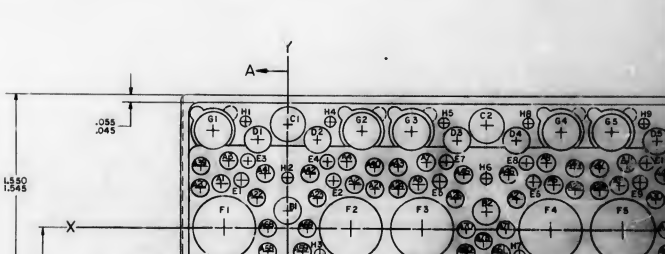
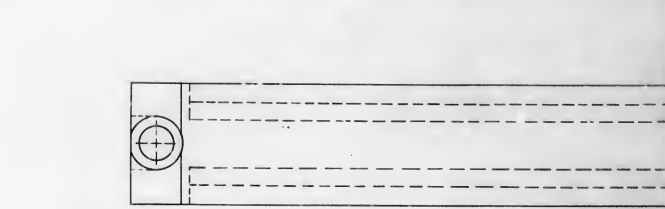
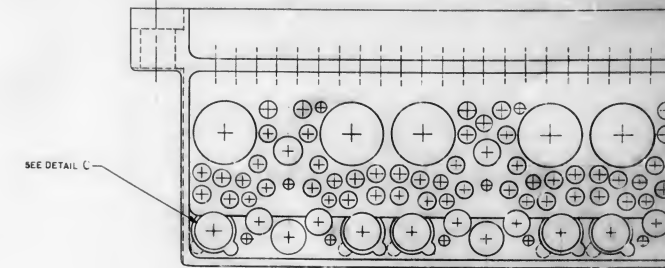
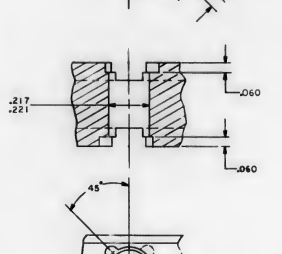
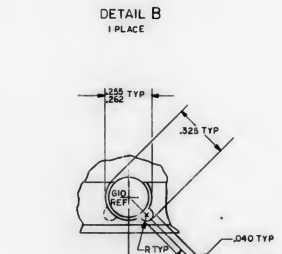
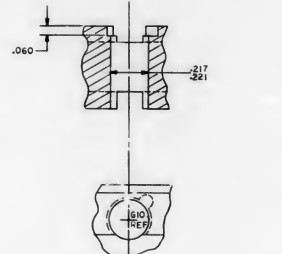
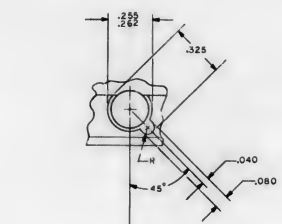






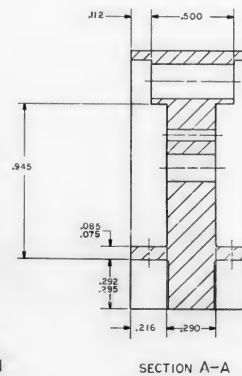
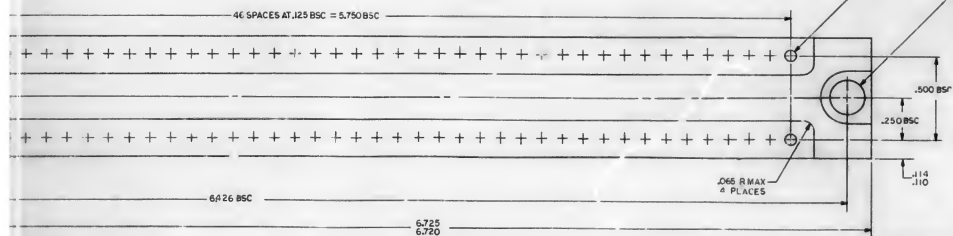
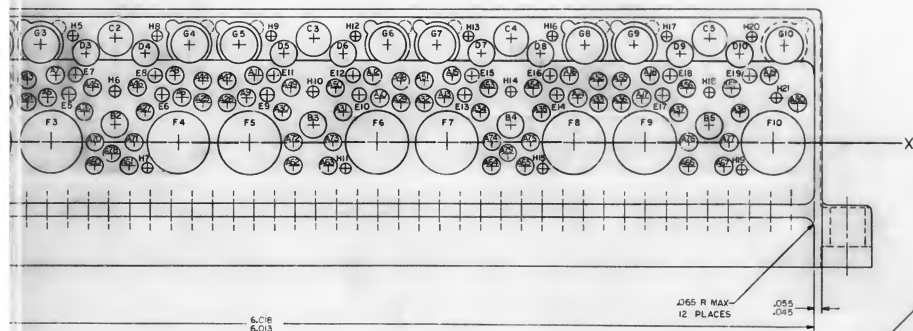
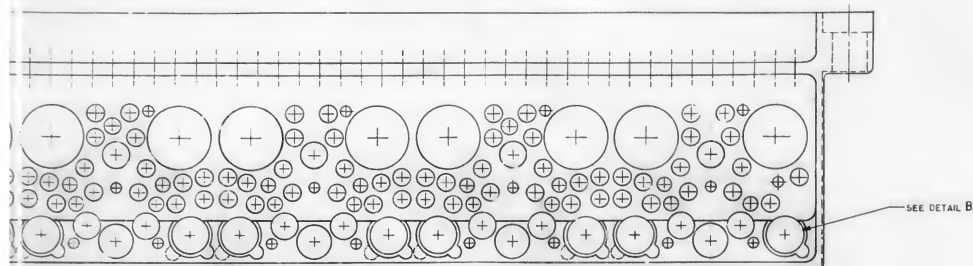
HOLE IDENT	Y-DIM	Y-DIM	HOLE DIA	QTY
A1	.005	.270		
A2	.005	.270		
A3	.350	.400		
A4	.350	.400		
A5	.985	.270		
A6	.1605	.270		
A7	.840	.400		
A8	.155	.400		
A9	.1995	.270		
A10	.845	.270		
A11	.265	.400		
A12	.275	.400		
A13	.315	.270		
A14	.3025	.270		
A15	.355	.400		
A16	.355	.400		
A17	.435	.270		
A18	.440	.400		
A19	.840	.400		
A20	.215	.400		
A21	.215	.400		
A22	.55	.185		
A23	.55	.185		
A24	.55	.185		
A25	.740	.240		
A26	.15	.185		
A27	.365	.185		
A28	.870	.240		
A29	.230	.240		
A30	.225	.185		
A31	.265	.185		
A32	.3070	.240		
A33	.4130	.240		
A34	.3415	.185		
A35	.3785	.185		
A36	.4270	.240		
A37	.5615	.185		
A38	.5965	.185		
A39	.530	.370		
A40	.530	.370		
A41	.135	.330		
A42	.135	.330		
A43	.410	.370		
A44	.1730	.370		
A45	.1045	.330		
A46	.1335	.330		
A47	.1870	.370		
A48	.2330	.370		
A49	.2415	.330		
A50	.2335	.330		
A51	.3070	.370		
A52	.4130	.370		
A53	.3465	.330		
A54	.3735	.330		
A55	.3770	.370		
A56	.4665	.330		
A57	.4335	.330		
A58	.120	.140		
A59	.090			
A60	.190			
A61	.120			
A62	.2280			
A63	.2090			
A64	.3480			
A65	.3690			
A66	.4580			
A67	.4980	.140		
A68	.120	.000		
A69	.120	.000		
A70	.1080			
A71	.1320			
A72	.2480			
A73	.2520			
A74	.3480			
A75	.3750			
A76	.4880			
A77	.1320	.000		
A78	.118	.070		
A79	.3535	.070		
A80	.5330	.240		
B1	.000	.108		
B2	.1200			
B3	.2400			
B4	.3600			
B5	.4800	.108		

HOLE IDENT	X-DIM	Y-DIM	HOLE DIA	QTY
C1	.000	.525		
C2	.1200			
C3	.2400			
C4	.3600			
C5	.4800	.625		
D1	.180	.330		
D2	.360			
D3	.1020			
D4	.1330			
D5	.2230			
D6	.2530			
D7	.3420			
D8	.3780			
D9	.4620			
D10	.5380	.530		
E1	.280	.285		
E2	.280	.285		
E3	.240	.400		
E4	.240	.400		
E5	.920	.285		
E6	.1490	.285		
E7	.360	.400		
E8	.1440	.400		
E9	.2120	.285		
E10	.2490	.285		
E11	.240	.400		
E12	.2240	.400		
E13	.3320	.285		
E14	.3690	.285		
E15	.3360	.400		
E16	.3840	.400		
E17	.4320	.285		
E18	.4560	.400		
E19	.5040	.400		
F1	.380	.000		
F2	.380			
F3	.810			
F4	.1580			
F5	.2010			
F6	.2780			
F7	.3210			
F8	.3950			
F9	.4410			
F10	.5190	.000		
G1	.450	.585		
G2	.450			
G3	.750			
G4	.1650			
G5	.1920			
G6	.2850			
G7	.3180			
G8	.4050			
G9	.4350			
G10	.5230	.805		
H1	.255	.635		
H2	.000	.308		
H3	.195	.160		
H4	.625	.635		
H5	.945	.635		
H6	.1200	.308		
H7	.1335	.160		
H8	.125	.635		
H9	.2145	.635		
H10	.240	.308		
H11	.2595	.160		
H12	.2655	.635		
H13	.3345	.635		
H14	.3600	.308		
H15	.3795	.160		
H16	.3895	.635		
H17	.4545	.635		
H18	.4800	.308		
H19	.4995	.160		
H20	.5055	.635		
H21	.5205	.270		



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: MAGNESIUM ALLOY ZK60A-T5 PER QQ-M-31
  3. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
  4. ALL FILLET AND RADI TO BE .005/.020 UNLESS OTHERWISE SPECIFIED
  5. ALL SURFACES  $R_{1.6}$  UNLESS OTHERWISE SPECIFIED
  6. FINISH: ANODIZE PER MIL-M-45202 TYPE I CLASS C

F4



.072 DIA  
.073  
94 HOLES  
Ø.004 DIA

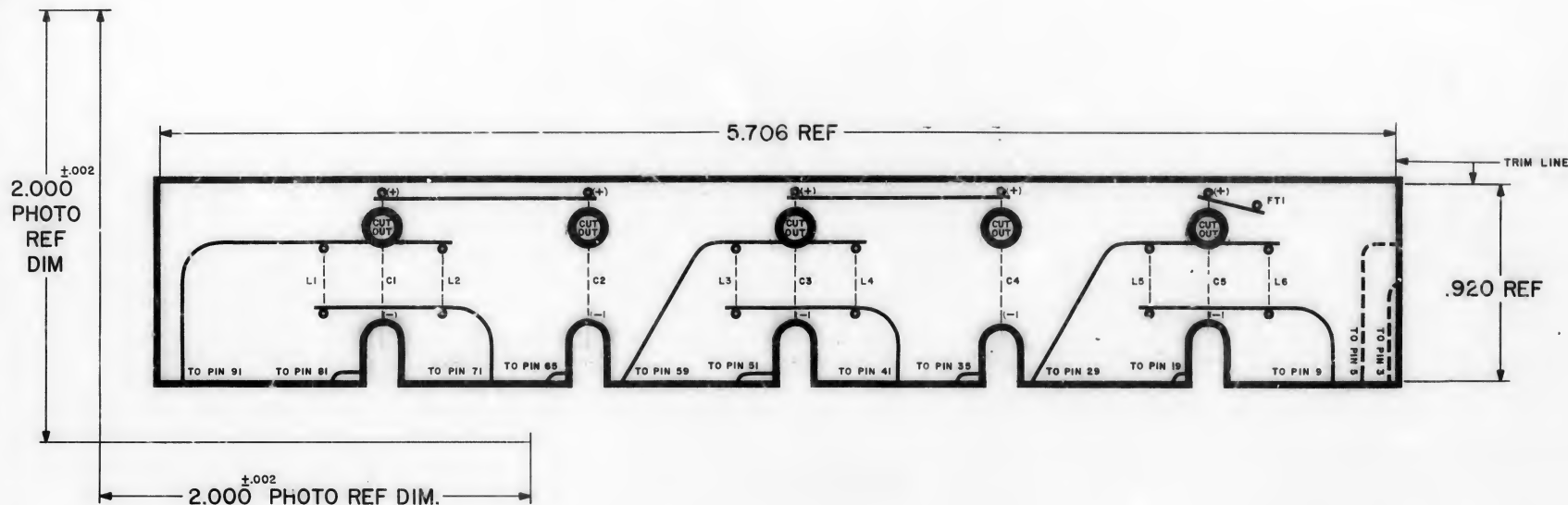
SECTION A-A  
.203 DIA THRU  
.312 DIA C BORE  
DEEP (FARSIDE)  
2 PLACES  
Ø.008 DIA

F2

QTY REQD	PART OR IDENTIFYING NO	DESCRIPTION OR DESCRIPTION	UNIT REQD
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER ASTROTOR, TEXAS			
HEADER HOUSING INTERFACE MODULE A20 - A40			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS 1/16 - .0005 1/32 - .0010 1/8 - .0015 1/4 - .0020 1/2 - .0030 3/4 - .0040 1 - .0050 2 - .0060 3 - .0070 4 - .0080 5 - .0090 6 - .0100 7 - .0110 8 - .0120 9 - .0130 10 - .0140 11 - .0150 12 - .0160 13 - .0170 14 - .0180 15 - .0190 16 - .0200 17 - .0210 18 - .0220 19 - .0230 20 - .0240 21 - .0250 22 - .0260 23 - .0270 24 - .0280 25 - .0290 26 - .0300 27 - .0310 28 - .0320 29 - .0330 30 - .0340 31 - .0350 32 - .0360 33 - .0370 34 - .0380 35 - .0390 36 - .0400 37 - .0410 38 - .0420 39 - .0430 40 - .0440 41 - .0450 42 - .0460 43 - .0470 44 - .0480 45 - .0490 46 - .0500 47 - .0510 48 - .0520 49 - .0530 50 - .0540 51 - .0550 52 - .0560 53 - .0570 54 - .0580 55 - .0590 56 - .0600 57 - .0610 58 - .0620 59 - .0630 60 - .0640 61 - .0650 62 - .0660 63 - .0670 64 - .0680 65 - .0690 66 - .0700 67 - .0710 68 - .0720 69 - .0730 70 - .0740 71 - .0750 72 - .0760 73 - .0770 74 - .0780 75 - .0790 76 - .0800 77 - .0810 78 - .0820 79 - .0830 80 - .0840 81 - .0850 82 - .0860 83 - .0870 84 - .0880 85 - .0890 86 - .0900 87 - .0910 88 - .0920 89 - .0930 90 - .0940 91 - .0950 92 - .0960 93 - .0970 94 - .0980 95 - .0990 96 - .1000 97 - .1010 98 - .1020 99 - .1030 100 - .1040 101 - .1050 102 - .1060 103 - .1070 104 - .1080 105 - .1090 106 - .1100 107 - .1110 108 - .1120 109 - .1130 110 - .1140 111 - .1150 112 - .1160 113 - .1170 114 - .1180 115 - .1190 116 - .1200 117 - .1210 118 - .1220 119 - .1230 120 - .1240 121 - .1250 122 - .1260 123 - .1270 124 - .1280 125 - .1290 126 - .1300 127 - .1310 128 - .1320 129 - .1330 130 - .1340 131 - .1350 132 - .1360 133 - .1370 134 - .1380 135 - .1390 136 - .1400 137 - .1410 138 - .1420 139 - .1430 140 - .1440 141 - .1450 142 - .1460 143 - .1470 144 - .1480 145 - .1490 146 - .1500 147 - .1510 148 - .1520 149 - .1530 150 - .1540 151 - .1550 152 - .1560 153 - .1570 154 - .1580 155 - .1590 156 - .1600 157 - .1610 158 - .1620 159 - .1630 160 - .1640 161 - .1650 162 - .1660 163 - .1670 164 - .1680 165 - .1690 166 - .1700 167 - .1710 168 - .1720 169 - .1730 170 - .1740 171 - .1750 172 - .1760 173 - .1770 174 - .1780 175 - .1790 176 - .1800 177 - .1810 178 - .1820 179 - .1830 180 - .1840 181 - .1850 182 - .1860 183 - .1870 184 - .1880 185 - .1890 186 - .1900 187 - .1910 188 - .1920 189 - .1930 190 - .1940 191 - .1950 192 - .1960 193 - .1970 194 - .1980 195 - .1990 196 - .2000 197 - .2010 198 - .2020 199 - .2030 200 - .2040 201 - .2050 202 - .2060 203 - .2070 204 - .2080 205 - .2090 206 - .2100 207 - .2110 208 - .2120 209 - .2130 210 - .2140 211 - .2150 212 - .2160 213 - .2170 214 - .2180 215 - .2190 216 - .2200 217 - .2210 218 - .2220 219 - .2230 220 - .2240 221 - .2250 222 - .2260 223 - .2270 224 - .2280 225 - .2290 226 - .2300 227 - .2310 228 - .2320 229 - .2330 230 - .2340 231 - .2350 232 - .2360 233 - .2370 234 - .2380 235 - .2390 236 - .2400 237 - .2410 238 - .2420 239 - .2430 240 - .2440 241 - .2450 242 - .2460 243 - .2470 244 - .2480 245 - .2490 246 - .2500 247 - .2510 248 - .2520 249 - .2530 250 - .2540 251 - .2550 252 - .2560 253 - .2570 254 - .2580 255 - .2590 256 - .2600 257 - .2610 258 - .2620 259 - .2630 260 - .2640 261 - .2650 262 - .2660 263 - .2670 264 - .2680 265 - .2690 266 - .2700 267 - .2710 268 - .2720 269 - .2730 270 - .2740 271 - .2750 272 - .2760 273 - .2770 274 - .2780 275 - .2790 276 - .2800 277 - .2810 278 - .2820 279 - .2830 280 - .2840 281 - .2850 282 - .2860 283 - .2870 284 - .2880 285 - .2890 286 - .2900 287 - .2910 288 - .2920 289 - .2930 290 - .2940 291 - .2950 292 - .2960 293 - .2970 294 - .2980 295 - .2990 296 - .3000 297 - .3010 298 - .3020 299 - .3030 300 - .3040 301 - .3050 302 - .3060 303 - .3070 304 - .3080 305 - .3090 306 - .3100 307 - .3110 308 - .3120 309 - .3130 310 - .3140 311 - .3150 312 - .3160 313 - .3170 314 - .3180 315 - .3190 316 - .3200 317 - .3210 318 - .3220 319 - .3230 320 - .3240 321 - .3250 322 - .3260 323 - .3270 324 - .3280 325 - .3290 326 - .3300 327 - .3310 328 - .3320 329 - .3330 330 - .3340 331 - .3350 332 - .3360 333 - .3370 334 - .3380 335 - .3390 336 - .3400 337 - .3410 338 - .3420 339 - .3430 340 - .3440 341 - .3450 342 - .3460 343 - .3470 344 - .3480 345 - .3490 346 - .3500 347 - .3510 348 - .3520 349 - .3530 350 - .3540 351 - .3550 352 - .3560 353 - .3570 354 - .3580 355 - .3590 356 - .3600 357 - .3610 358 - .3620 359 - .3630 360 - .3640 361 - .3650 362 - .3660 363 - .3670 364 - .3680 365 - .3690 366 - .3700 367 - .3710 368 - .3720 369 - .3730 370 - .3740 371 - .3750 372 - .3760 373 - .3770 374 - .3780 375 - .3790 376 - .3800 377 - .3810 378 - .3820 379 - .3830 380 - .3840 381 - .3850 382 - .3860 383 - .3870 384 - .3880 385 - .3890 386 - .3900 387 - .3910 388 - .3920 389 - .3930 390 - .3940 391 - .3950 392 - .3960 393 - .3970 394 - .3980 395 - .3990 396 - .4000 397 - .4010 398 - .4020 399 - .4030 400 - .4040 401 - .4050 402 - .4060 403 - .4070 404 - .4080 405 - .4090 406 - .4100 407 - .4110 408 - .4120 409 - .4130 410 - .4140 411 - .4150 412 - .4160 413 - .4170 414 - .4180 415 - .4190 416 - .4200 417 - .4210 418 - .4220 419 - .4230 420 - .4240 421 - .4250 422 - .4260 423 - .4270 424 - .4280 425 - .4290 426 - .4300 427 - .4310 428 - .4320 429 - .4330 430 - .4340 431 - .4350 432 - .4360 433 - .4370 434 - .4380 435 - .4390 436 - .4400 437 - .4410 438 - .4420 439 - .4430 440 - .4440 441 - .4450 442 - .4460 443 - .4470 444 - .4480 445 - .4490 446 - .4500 447 - .4510 448 - .4520 449 - .4530 450 - .4540 451 - .4550 452 - .4560 453 - .4570 454 - .4580 455 - .4590 456 - .4600 457 - .4610 458 - .4620 459 - .4630 460 - .4640 461 - .4650 462 - .4660 463 - .4670 464 - .4680 465 - .4690 466 - .4700 467 - .4710 468 - .4720 469 - .4730 470 - .4740 471 - .4750 472 - .4760 473 - .4770 474 - .4780 475 - .4790 476 - .4800 477 - .4810 478 - .4820 479 - .4830 480 - .4840 481 - .4850 482 - .4860 483 - .4870 484 - .4880 485 - .4890 486 - .4900 487 - .4910 488 - .4920 489 - .4930 490 - .4940 491 - .4950 492 - .4960 493 - .4970 494 - .4980 495 - .4990 496 - .5000 497 - .5010 498 - .5020 499 - .5030 500 - .5040 501 - .5050 502 - .5060 503 - .5070 504 - .5080 505 - .5090 506 - .5100 507 - .5110 508 - .5120 509 - .5130 510 - .5140 511 - .5150 512 - .5160 513 - .5170 514 - .5180 515 - .5190 516 - .5200 517 - .5210 518 - .5220 519 - .5230 520 - .5240 521 - .5250 522 - .5260 523 - .5270 524 - .5280 525 - .5290 526 - .5300 527 - .5310 528 - .5320 529 - .5330 530 - .5340 531 - .5350 532 - .5360 533 - .5370 534 - .5380 535 - .5390 536 - .5400 537 - .5410 538 - .5420 539 - .5430 540 - .5440 541 - .5450 542 - .5460 543 - .5470 544 - .5480 545 - .5490 546 - .5500 547 - .5510 548 - .5520 549 - .5530 550 - .5540 551 - .5550 552 - .5560 553 - .5570 554 - .5580 555 - .5590 556 - .5600 557 - .5610 558 - .5620 559 - .5630 560 - .5640 561 - .5650 562 - .5660 563 - .5670 564 - .5680 565 - .5690 566 - .5700 567 - .5710 568 - .5720 569 - .5730 570 - .5740 571 - .5750 572 - .5760 573 - .5770 574 - .5780 575 - .5790 576 - .5800 577 - .5810 578 - .5820 579 - .5830 580 - .5840 581 - .5850 582 - .5860 583 - .5870 584 - .5880 585 - .5890 586 - .5900 587 - .5910 588 - .5920 589 - .5930 590 - .5940 591 - .5950 592 - .5960 593 - .5970 594 - .5980 595 - .5990 596 - .6000 597 - .6010 598 - .6020 599 - .6030 600 - .6040 601 - .6050 602 - .6060 603 - .6070 604 - .6080 605 - .6090 606 - .6100 607 - .6110 608 - .6120 609 - .6130 610 - .6140 611 - .6150 612 - .6160 613 - .6170 614 - .6180 615 - .6190 616 - .6200 617 - .6210 618 - .6220 619 - .6230 620 - .6240 621 - .6250 622 - .6260 623 - .6270 624 - .6280 625 - .6290 626 - .6300 627 - .6310 628 - .6320 629 - .6330 630 - .6340 631 - .6350 632 - .6360 633 - .6370 634 - .6380 635 - .6390 636 - .6400 637 - .6410 638 - .6420 639 - .6430 640 - .6440 641 - .6450 642 - .6460 643 - .6470 644 - .6480 645 - .6490 646 - .6500 647 - .6510 648 - .6520 649 - .6530 650 - .6540 651 - .6550 652 - .6560 653 - .6570 654 - .6580 655 - .6590 656 - .6600 657 - .6610 658 - .6620 659 - .6630 660 - .6640 661 - .6650 662 - .6660 663 - .6670 664 - .6680 665 - .6690 666 - .6700 667 - .6710 668 - .6720 669 - .6730 670 - .6740 671 - .6750 672 - .6760 673 - .6770 674 - .6780 675 - .6790 676 - .6800 677 - .6810 678 - .6820 679 - .6830 680 - .6840 681 - .6850 682 - .6860 683 - .6870 684 - .6880 685 - .6890 686 - .6900 687 - .6910 688 - .6920 689 - .6930 690 - .6940 691 - .6950 692 - .6960 693 - .6970 694 - .6980 695 - .6990 696 - .7000 697 - .7010 698 - .7020 699 - .7030 700 - .7040 701 - .7050 702 - .7060 703 - .7070 704 - .7080 705 - .7090 706 - .7100 707 - .7110 708 - .7120 709 - .7130 710 - .7140 711 - .7150 712 - .7160 713 - .7170 714 - .7180 715 - .7190 716 - .7200 717 - .7210 718 - .7220 719 - .7230 720 - .7240 721 - .7250 722 - .7260 723 - .7270 724 - .7280 725 - .7290 726 - .7300 727 - .7310 728 - .7320 729 - .7330 730 - .7340 731 - .7350 732 - .7360 733 - .7370 734 - .7380 735 - .7390 736 - .7400 737 - .7410 738 - .7420 739 - .7430 740 - .7440 741 - .7450 742 - .7460 743 - .7470 744 - .7480 745 - .7490 746 - .7500 747 - .7510 748 - .7520 749 - .7530 750 - .7540 751 - .7550 752 - .7560 753 - .7570 754 - .7580 755 - .7590 756 - .7600 757 - .7610 758 - .7620 759 - .7630 760 - .7640 761 - .7650 762 - .7660 763 - .7670 764 - .7680 765 - .7690 766 - .7700 767 - .7710 768 - .7720 769 - .7730 770 - .7740 771 - .7750 772 - .7760 773 - .7770 774 - .7780 775 - .7790 776 - .7800 777 - .7810 778 - .7820 779 - .7830 780 - .7840 781 - .7850 782 - .7860 783 - .7870 784 - .7880 785 - .7890 786 - .7900 787 - .7910 788 - .7920 789 - .7930 790 - .7940 791 - .7950 792 - .7960 793 - .7970 794 - .7980 795 - .7990 796 - .8000 797 - .8010 798 - .8020 799 - .8030 800 - .8040 801 - .8050 802 - .8060 803 - .8070 804 - .8080 805 - .8090 806 - .8100 807 - .8110 808 - .8120 809 - .8130 810 - .8140 811 - .8150 812 - .8160 813 - .8170 814 - .8180 815 - .8190 816 - .8200 817 - .8210 818 - .8220 819 - .8230 820 - .8240 821 - .8250 822 - .8260 823 - .8270 824 - .8280 825 - .8290 826 - .8300 827 - .8310 828 - .8320 829 - .8330 830 - .8340 831 - .8350 832 - .8360 833 - .8370 834 - .8380 835 - .8390 836 - .8400 837 - .8410 838 - .8420 839 - .8430 840 - .8440 841 - .8450 842 - .8460 843 - .8470 844 - .8480 845 - .8490 846 - .8500 847 - .8510 848 - .8520 849 - .8530 850 - .8540 851 - .8550 852 - .8560 853 - .8570 854 - .8580 855 - .8590 856 - .8600 857 - .8610 858 - .8620 859 - .8630 860 - .8640 861 - .8650 862 - .8660 863 - .8670 864 - .8680 865 - .8690 866 - .8700 867 - .8710 868 - .8720 869 - .8730 870 - .8740 871 - .8750 872 - .8760 873 - .8770 874 - .8780 875 - .8790 876 - .8800 877 - .8810 878 - .8820 879 - .8830 880 - .8840 881 - .8850 882 - .8860 883 - .8870 884 - .8880 885 - .8890 886 - .8900 887 - .8910 888 - .8920 889 - .8930 890 - .8940 891 - .8950 892 - .8960 893 - .8970 894 - .8980 895 - .8990 896 - .9000 897 - .9010 898 - .9020 899 - .9030 900 - .9040 901 - .9050 902 - .9060 903 - .9070 904 - .9080 905 - .9090 906 - .9100 907 - .9110 908 - .9120 909 - .9130 910 - .9140 911 - .9150 912 - .9160 913 - .9170 914 - .9180 915 - .9190 916 - .9200 917 - .9210 918 - .9220 919 - .9230 920 - .9240 921 - .9250 922 - .9260 923 - .9270 924 - .9280 925 - .9290 926 - .9300 927 - .9310 928 - .9320 929 - .9330 930 - .9340 931 - .9350 932 - .9360 933 - .9370 934 - .9380 935 - .9390 936 - .9400 937 - .9410 938 - .9420 939 - .9430 940 - .9440 941 - .9450 942 - .9460 943 - .9470 944 - .9480 945 - .9490 946 - .9500 947 - .9510 948 - .9520 949 - .9530 950 - .9540 951 - .9550 952 - .9560 953 - .9570 954 - .9580 955 - .9590 956 - .9600 957 - .9610 958 - .9620 959 - .9630 960 - .9640 961 - .9650 962 - .9660 963 - .9670 964 - .9680 965 - .9690 966 - .9700 967 - .9710 968 - .9720 969 - .9730 970 - .9740 971 - .9750 972 - .9760 973 - .9770 974 - .9780 975 - .9790 976 - .9800 977 - .9810 978 - .9820 979 - .9830 980 - .9840 981 - .9850 982 - .9860 983 - .9870 984 - .9880 985 - .9890 986 - .9900 987 - .9910 988 - .9920 989 - .9930 990 - .9940 991 - .9950 992 - .9960 993 - .9970 994 - .9980 995 - .9990 1000 - 1.0000 1001 - 1.0010 1002 - 1.0020 1003 - 1.0030 1004 - 1.0040 1005 - 1.0050 1006 - 1.0060 1007 - 1.0070 1008 - 1.0080 1009 - 1.0090 1010 - 1.0100 1011 - 1.0110 1012 - 1.0120 1			

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY THE GOVERNMENT, THE USER ASSUMES ALL LIABILITY FOR ANY INFRINGEMENTS OR DAMAGES THAT MAY BE INCURRED BY THE USER. THE GOVERNMENT MAKES NO WARRANTY, REPRESENTATION, OR GUARANTEE, AND DOES NOT ACCEPT ANY LIABILITY FOR ANY INFRINGEMENTS OR DAMAGES THAT MAY BE INCURRED BY THE USER. THE GOVERNMENT SHALL NOT BE LIABLE FOR ANY INFRINGEMENTS OR DAMAGES THAT MAY BE INCURRED BY THE USER.

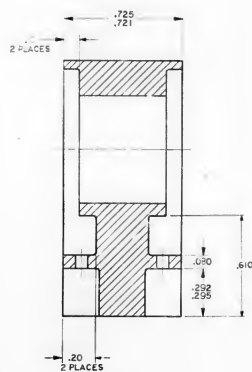
REVISIONS		DATE	APPROVAL
A	REVISED PER TDRR 11477	10/1/67	John A. [Signature]
B	REVISED PER TDRR 13675	11/6/67	[Signature]



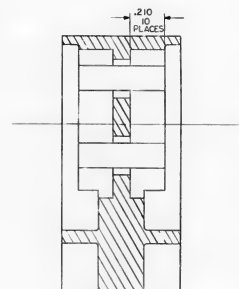
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
  3. CUT TO WITHIN .010 OF TRIM LINE
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  5. MATL. FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
  6.  $\odot .065 / .075$  DIA PUNCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Ed. [Signature]</i> DATE <i>10/1/67</i>		INSULATOR PHOTOGRAPHIC MASTER FILTER MODULE 85	
CHECKED <i>[Signature]</i> DATE <i>10/1/67</i>		CODE IDENT NO. SIZE	
APPROVAL <i>[Signature]</i> DATE <i>10/1/67</i>		D 1004703	
NASA APPROVAL <i>[Signature]</i>		SCALE 4/1	
MIT APPROVAL <i>[Signature]</i>		SHEET 1 OF 1	





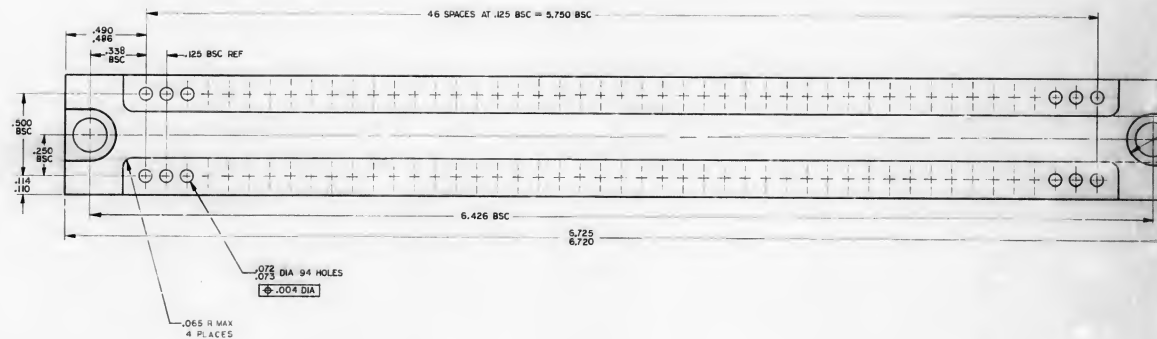
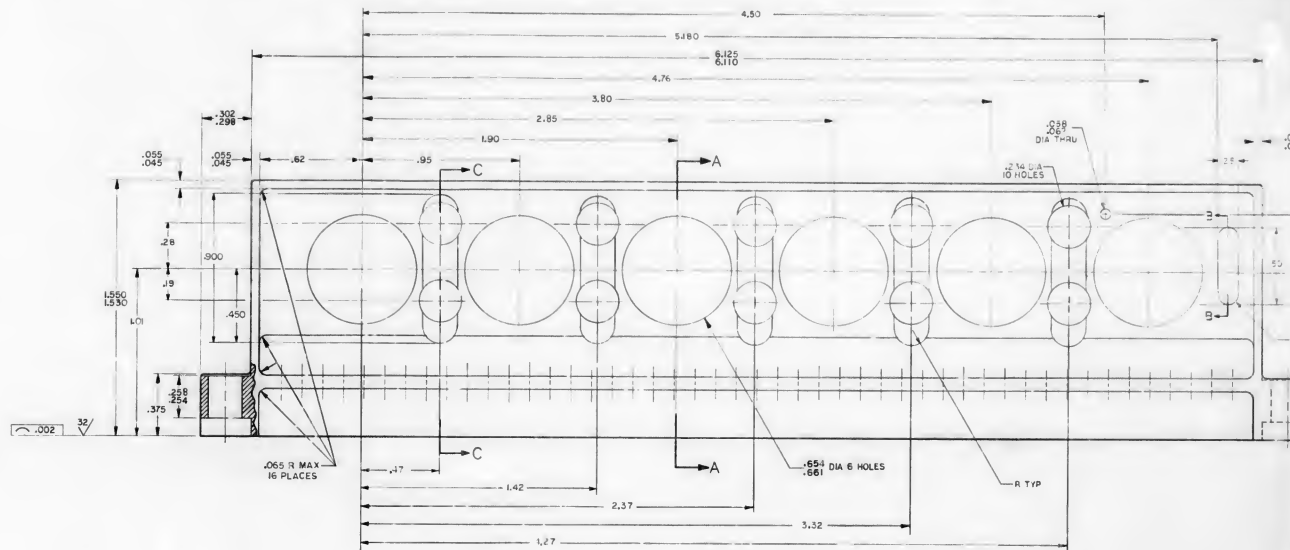
SECTION A-A

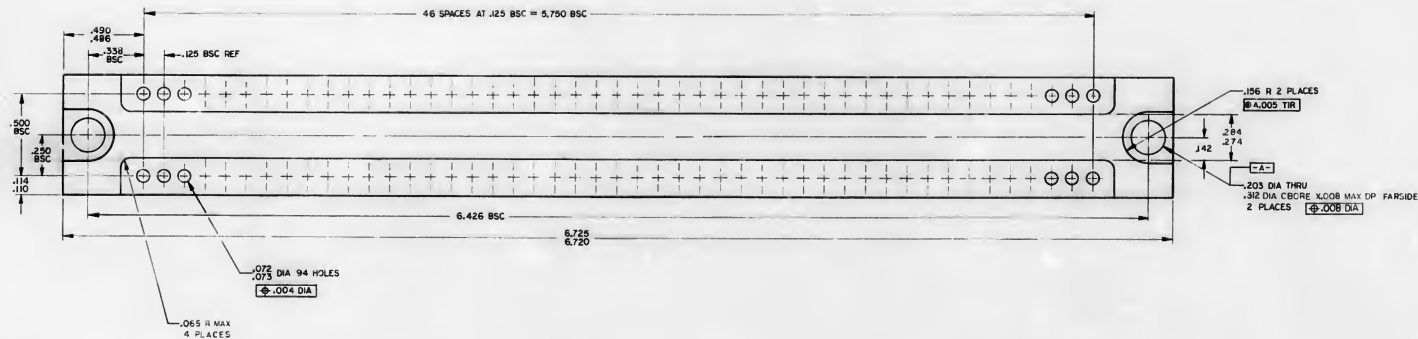
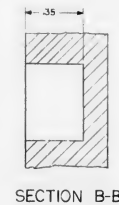
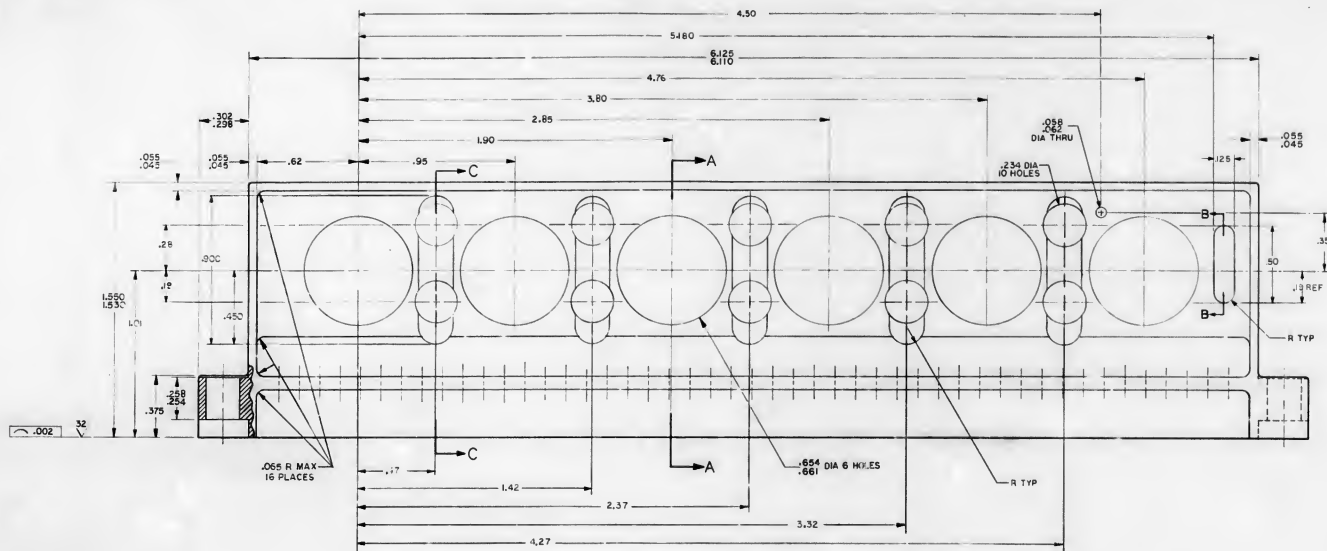


SECTION C-C

# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
3. UNLESS OTHERWISE SPECIFIED, ALL FILLETS AND RADI TO BE .008/.020
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005 TO .005
5. UNLESS OTHERWISE SPECIFIED, 125/ ALL OVER
6. FINISH: ANODIZE PER MIL-M-45202 TYPE I CLASS C

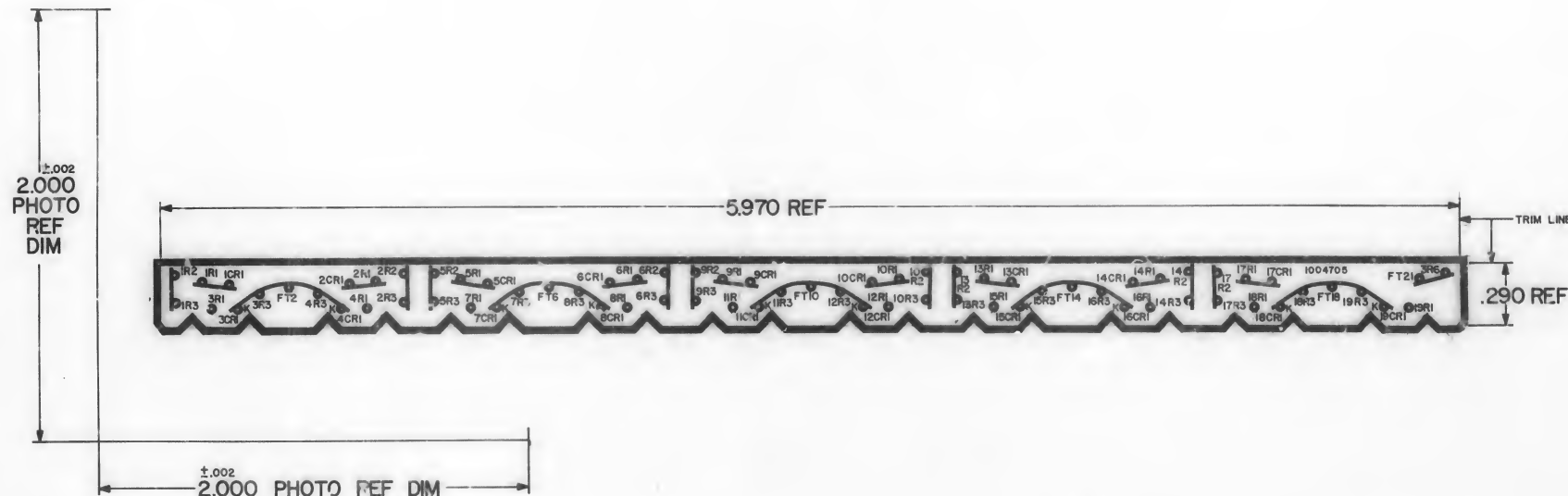




1004704 | C

1004704 | C

UTL REQD	PRINT OR EXHIBIT NO	NONREPLICABLE OR OVERLAY	FIG NO
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER			
HEADER HOUSING			
FILTER MODULE B5			
1003705	USED ON	SCALE 4/1	DATE 1/1/70
APPLICATION		SEE NOTE 6	SEE NOTE 6



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING IS A REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .010 INCH PER INCH
  3. GROUND TO WITHIN .010 OF
  4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  5. MATERIAL: FILM .008/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
  6. Q35/Q45 DIA. PUNCH

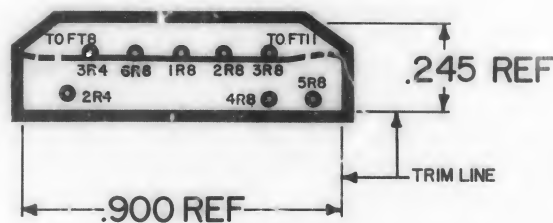
QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN FIN	
				LIST OF MATERIALS			
M I T INSTRUMENTATION LAB CAMBRIDGE, MASS				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		DIMS. IN DECIMALS		ANGLES IN DEGREES			
FRACTIONS		DECIMALS		ANGLES			
DO NOT SCALE THIS DRAWING		DRAWN BY <i>P. H. White</i> DATE <i>10-1-64</i>		INSULATOR "A" PHOTOGRAPHIC MASTER			
WATER RESISTANT		CHECKED BY <i>P. H. White</i> DATE <i>10-1-64</i>		INTERFACE MODULE #20 OR A41			
SEE NOTE 5		APPROVED BY <i>P. H. White</i> DATE <i>10-1-64</i>		NASA DRAWING NO. 1004705			
HEAT TREATMENT		NASA APPROVAL <i>Michael S. G. / 10-1-64</i>		EDDIE IDENT NO. SIZE D			
NEXT ASST USED ON		APPLICATION		MIT APPROVAL <i>J. H. White</i> DATE <i>10-1-64</i>		SCALE <i>4/1</i> WT _____ SHEET 1 OF 1	



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY DISCLAIMS ANY RESPONSIBILITY FOR ANY OMISSION, MISSTATEMENT, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY REPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS				
SYM	ZONE	DESCRIPTION	DR	CHK
		10730		
DATE	APPROVED			

±.002  
2.000  
PHOTO  
REF  
DIM.



±.002  
2.000 PHOTO REF DIM.

# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
6. .035/.043 DIA P.H.NCH

1003708	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
CAPACITOR VALUES ARE IN  $\mu$ f  
RESISTOR VALUES ARE IN OHMS  
TOLERANCES ON  
FRACTIONS DECIMALS ANGLES  
± — ± — ± —  
DO NOT SCALE THIS DRAWING

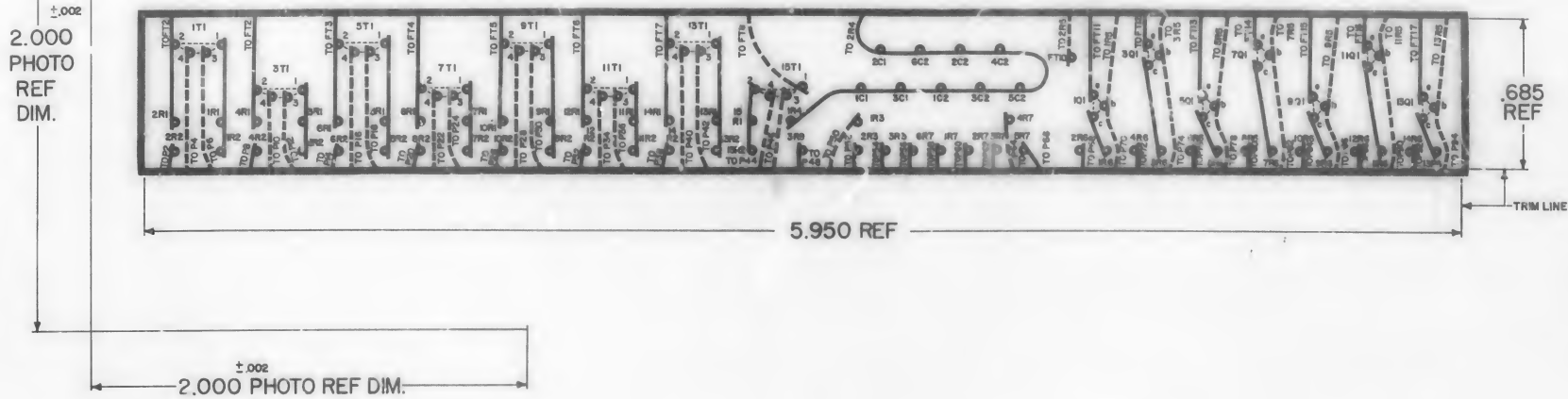
MATERIAL

SEE NOTE 5

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>Tom Nelson</i>	910069	INSULATOR "A" PHOTOGRAPHIC MASTER INTERFACE MODULE A19 ORA39		
CHECKED <i>R. L. Nelson</i>	29 JUN 69			
APPROVED <i>R. L. Nelson</i>	29 JUN 69			
APPROVED <i>Edgar C. Hall</i>	29 JUN 69			
APPROVED MIT <i>R. L. Nelson</i>	6/19/69	CODE IDENT NO. <b>C</b>	DRAWING NO. <b>1004710</b>	
APPROVED MSC <i>R. L. Nelson</i>	6/19/69	SCALE 4/1	SHEET	OF

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS SHALL BE IN INCHES.  
2. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
3. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
4. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
5. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
6. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
7. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.  
8. DIMENSIONS SHALL BE GIVEN TO THE CLOSEST .001 INCH.

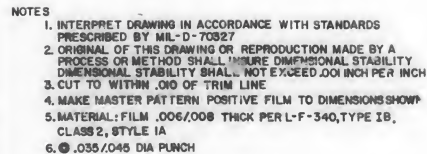
REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
1	REVISED PER TDR 11483	10/23/60	W. H. H. / J. H. H.



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH.
  3. CUT TO WITHIN .010 OF TRIM LINE
  4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
  5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE 1A
  6. .035/.045 DIA PUNCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
INSTRUMENTATION LAB HOUSTON, TEXAS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY: J. H. H. DATE: 10/23/60		INSULATOR "B"	
CHECKED BY: J. H. H. DATE: 10/23/60		PHOTOGRAPHIC MASTER	
APPROVAL BY: J. H. H. DATE: 10/23/60		INTERFACE MODULE A19 OF A39	
1003708		NASA APPROVAL: J. H. H. DATE: 10/23/60	CODE IDENT NO: 1004711
NEXT ASSY: USED ON: APPLICATION:		MIT APPROVAL: J. H. H. DATE: 10/23/60	SCALE: 4/1 WT: SHEET 1 OF 1

REVISIONS 10730			
SYM	DESCRIPTION	DATE	APPROVAL

[illegible]





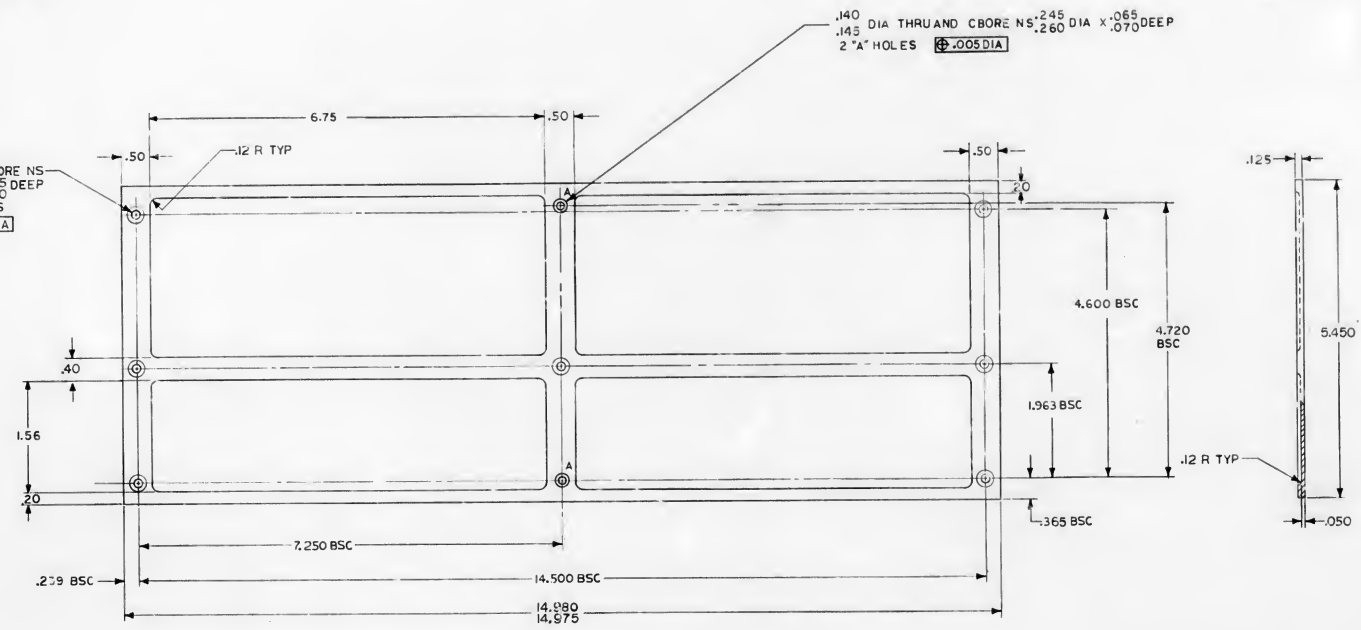
1. INTERMIT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-0-70327
2. MATL: ALUMINUM ALLOY 6061-T6 PER QQ-A-250/11
3. REMOVE BURRS & BREAK SHARP EDGES .015/.015
4. UNLESS OTHERWISE SPECIFIED 125° ALL SURFACES
5. FINISH: PLATE (ELECTRODEPOSITED) ALL OVERFACES PER QQ-C-320, CLASS 2, TYPE II. PLATING TO BE .0004 TO .0008 THICK, HARDNESS ROCKWELL C60 MIN. DIMENSIONS APPLY AFTER PLATING. SPECIFIED THICKNESS REQUIRED ON ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
6. IDENTIFY PER 1002019

REVISIONS <i>PLR 12-06</i>			
STN	DESCRIPTION	DATE	APPROV
A	REVISED AND UPGRADED TO CLASS A PER TORR <i>12567</i>	<i>12/1/06</i>	<i>JA</i>
B	REVISED PER TORR <i>12621</i>	<i>12/1/06</i>	<i>JA</i>
C	REVISED PER TORR <i>14270</i>	<i>12/1/06</i>	<i>JA</i>

[illegible]

NOTICE: WHEN WORKING ON DRAWINGS, SPECIFICATIONS, OR OTHER DATA, THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION. THE USER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UP GRADED TO CLASS A PER TORR 1258/1	14 SEP 64	WHL
B	REVISED PER TORR 1338/5	17 OCT 64	WHL
C	REVISED PER TORR 1368/1	19 OCT 64	WHL
D	REVISED PER TORR 1428/9	24 NOV 64	WHL

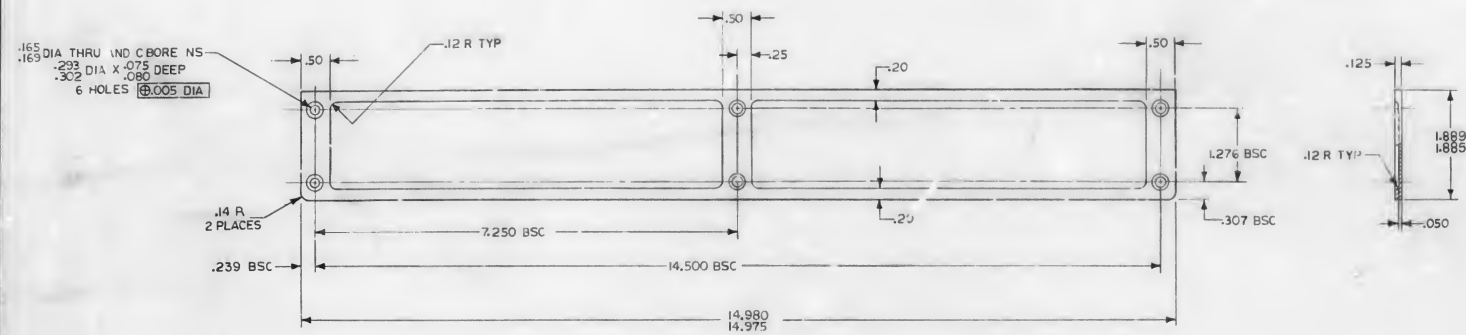


- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: 6061-T6 ALUMINUM, PER QQ-A-259/11
  3. SURFACE QUALITY: 125 ALL OVER
  4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/015
  5. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320, CLASS 2, TYPE II PLATING TO BE .0004 TO .0008 THICK, HARDNESS ROCKWELL C50 MIN. DIMENSIONS APPLY AFTER PLATING. SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
  6. IDENTIFY PER NO 1002019

QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN: <i>[Signature]</i> DATE: 2/2/64		REAR PLATE TRAY A&B	
CHECKED: <i>[Signature]</i> DATE: 10/7/64		AGC COMPUTER	
APPROVAL: <i>[Signature]</i> DATE: 10/7/64		CODE IDENT NO. D	
NASA APPROVAL: <i>[Signature]</i> DATE: 10/7/64		SIZE 1004714	
MIT APPROVAL: <i>[Signature]</i> DATE: 10/7/64		SCALE 1/1	
APPLICATION		SHEET 1 OF 1	

NOTES - 1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.  
2. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
3. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
4. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
5. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
6. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
7. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.  
8. DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE HOLE UNLESS OTHERWISE SPECIFIED.

REVISIONS			
BY	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UP GRADED TO CLASS A PER DRR 13 574	12/20/64	W. J. H.
B	REVISED PER DRR 13 284	12/20/64	W. J. H.



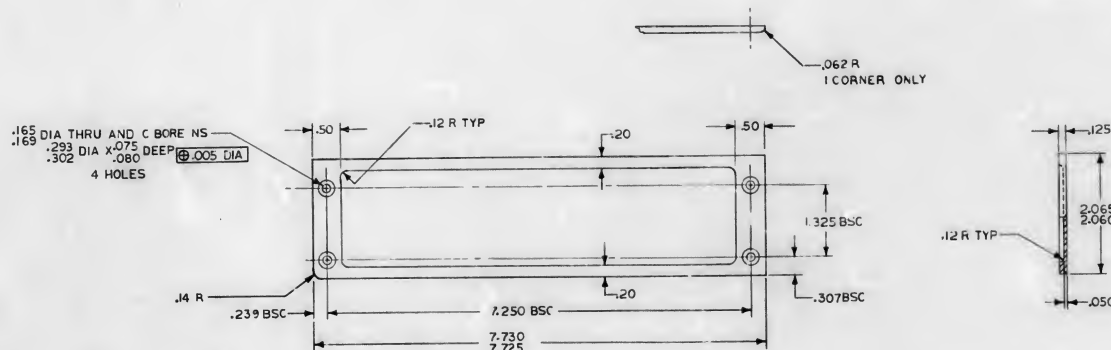
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: ALUMINUM ALLOY 6061-T6 PER QQ-A-250/11
  3. UNLESS OTHERWISE SPECIFIED 125/ ALL OVER
  4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
  5. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320, CLASS 2, TYPE I PLATING TO BE .0004 TO .0008 THICK, HARDNESS ROCKWELL C60 MIN. DIMENSIONS APPLY AFTER PLATING, SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
  6. IDENTIFY PER NO 1002019

QTY REQ	PART OR IDENTIFYING NO.	NAME/CLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
<div> <div> <div>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</div> <div>TOLERANCES ON</div> <div>FRACTIONS DECIMALS ANGLES</div> <div>± .005 ± .005 ± .005</div> <div>DO NOT SCALE THIS DRAWING</div> <div>MATERIAL</div> <div>SEE NOTE 2</div> </div> <div> <div>HEAT TREATMENT</div> <div>FINAL FINISH</div> <div>SEE NOTE 5</div> </div> </div> <div> <div>INSTRUMENTATION LAB</div> <div>DATE 12/20/64</div> <div>CHECKED 12/20/64</div> <div>APPROVAL 12/20/64</div> </div> <div> <div>MA/NNED SPACECRAFT CENTER</div> <div>HOUSTON, TEXAS</div> <div>FRONT PLATE</div> <div>TRA A</div> <div>AGC COMPUTER</div> </div>			
1003700		NASA APPROVAL 12/20/64	CODE IDENT NO. 1004715
NEXT ASSY	USED ON	MIT APPROVAL 12/20/64	SCALE 1/1 WT 1 OF 1



NOTES - THIS DRAWING IS A REVISION OF DRAWING 1003700-1. IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF THIS DRAWING TO HIS SPECIFIC APPLICATION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF THIS DRAWING AND FOR DETERMINING THE APPLICABILITY OF THIS DRAWING TO HIS SPECIFIC APPLICATION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF THIS DRAWING AND FOR DETERMINING THE APPLICABILITY OF THIS DRAWING TO HIS SPECIFIC APPLICATION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF THIS DRAWING AND FOR DETERMINING THE APPLICABILITY OF THIS DRAWING TO HIS SPECIFIC APPLICATION.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UP GRADED TO CLASS A PER TORR 12582	11/27/62	SN
B	REVISED PER TDAR 13296	11/4/64	WK

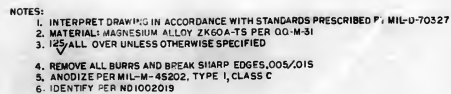


# NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: ALUMINUM ALLOY 6061-T6 PER QG-A-250/11
3. SURFACE QUALITY: 125 ALL OVER
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
5. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QG-C-320, CLASS 2, TYPE I PLATING TO BE .0004 TO .0008 THICK. HARDNESS ROCKWELL C60 MIN. DIMENSIONS APPLY AFTER PLATING. SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
6. IDENTIFY PER ND 1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMEN <sup>AT</sup> ATUKE OR E <sup>ITION</sup>	FIND NO.
LIST OF MATERIALS			
MITY INSTRUMENTATION LAB CLARKSBURG, WASH. DRAWN BY <i>RE: 11/27/62</i> CHECKED BY <i>RE: 11/27/62</i> APPROVAL BY <i>RE: 11/27/62</i>			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS FRONT PLATE LEFT SIDE TRAY B AGC COMPUTER			
1003700	HEAT TREATMENT	NASA APPROVAL <i>RE: 11/27/62</i>	C/D IDENT NO. <b>D</b> SIZE <b>1004716</b>
NEXT ASSY	USED ON	MIT APPROVAL <i>RE: 11/27/62</i>	SCALE 1/1 WT. SHEET 1 OF 1
APPLICATION		SEE NOTE 5	



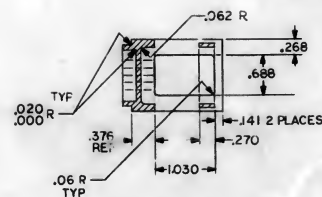
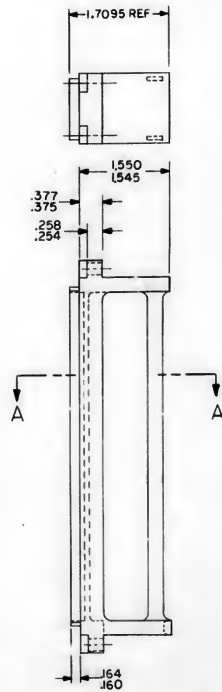
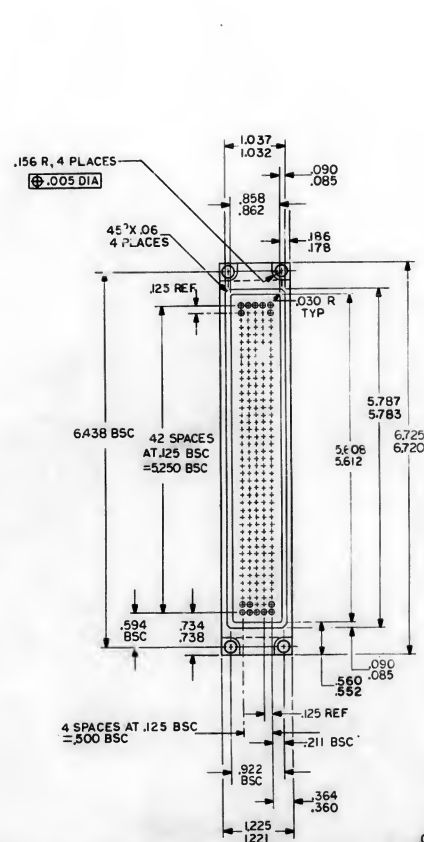


QTY		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FINISH	
LIST OF MATERIALS							
UNLESS OTHERWISE SPECIFIED		M.T.V.		MANNED SPACECRAFT CENTER			
OR DIMENSIONS ARE IN INCHES		INSTRUMENTATION LAB		HOUSTON, TEXAS			
TOLERANCES OR		DRAWN <i>W.B.</i> DATE <i>12/22/68</i>		CONNECTOR 360 CONTACT ACR COMPUTER			
FUNCTIONS DECIMALS ANGLES		CHECKED <i>W.B.</i>					
FRACTIONS $\frac{1}{16}$ - $\frac{1}{8}$		APPROVED <i>W.B.</i>					
OR .XXX IN POS		APPROVAL <i>W.B.</i>		SIZE			
OR NOT SCALY FOR DIMENSIONS		APPROVAL <i>W.B.</i>		NADA DRAWING NO.			
MATERIAL		APPROVAL <i>W.B.</i>		E 10047:8			
SEE NOTE 2				SCALE 1/1			
TREAT TREATMENT		NADA APPROVAL <i>W.B.</i>		SHEET 1 OF 4			
NEAT ASST USED ON		APPROVAL <i>W.B.</i>					
APPLICATION		SEE NOTE 3					

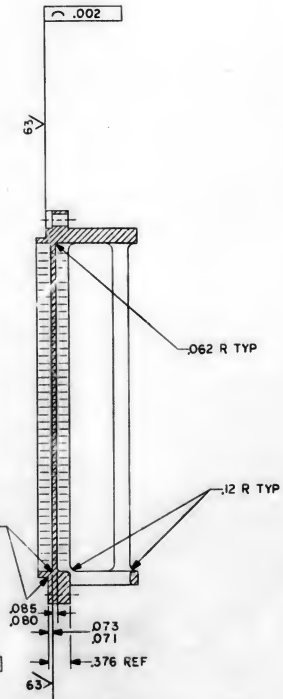
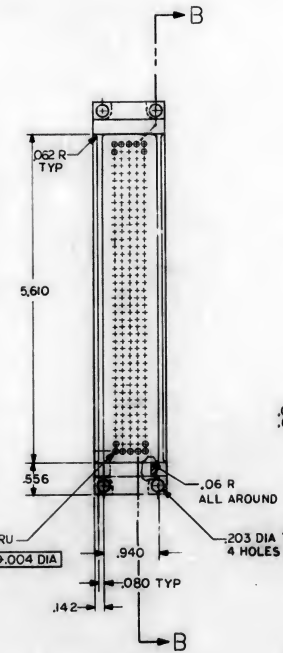


THIS DRAWING IS THE PROPERTY OF NASA. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS TO BE RETURNED TO NASA WHEN NO LONGER REQUIRED. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM NASA. THE USER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE APPROPRIATE AGENCIES FOR REPRODUCTION OR TRANSMISSION OF THIS DRAWING. THE USER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE APPROPRIATE AGENCIES FOR REPRODUCTION OR TRANSMISSION OF THIS DRAWING.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
A	UPGRADED TO CLASS A PER DRR 155A	1/14/64	RW



SECTION A-A



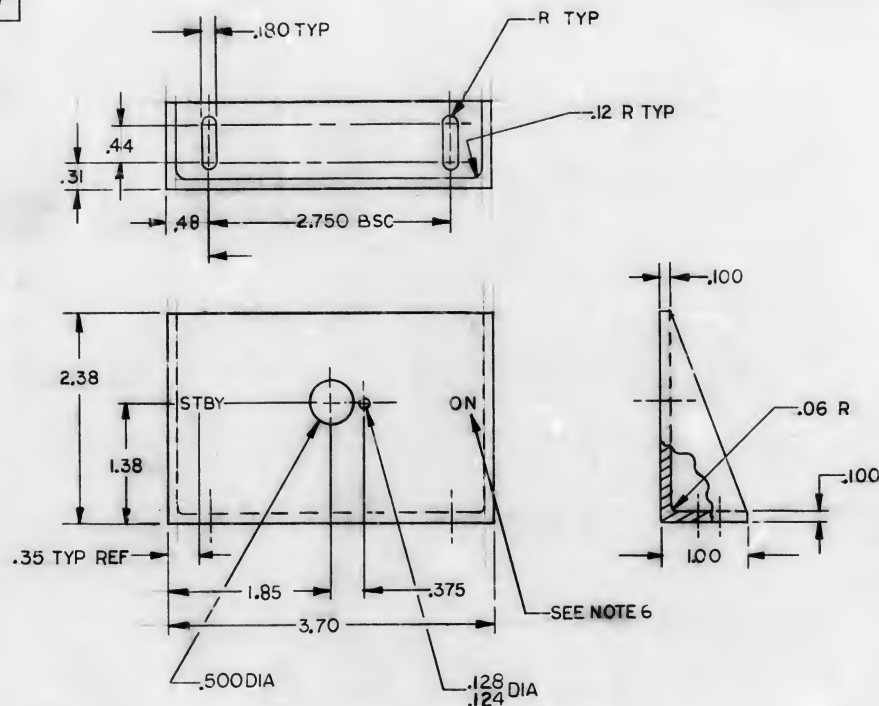
SECTION B-B

- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: MAGNESIUM ALLOY, ZK60A-T5, 90-M-31
  3. 125/ALL OVER UNLESS OTHERWISE SPECIFIED
  4. REMOVE ALL BURRS & BREAK SHARP EDGES .005
  5. ANODIZE PER MIL-M-45202, TYPE I, CLASS C .015
  6. IDENTIFY PER ND 1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO.
LIST OF MATERIALS			
INSTRUMENTATION LAB CAMBRIDGE, MASS. DATE 2-2-64 DRAWN BY [Signature] CHECKED BY [Signature] APPROVAL BY [Signature] MATERIAL SEE NOTE 2 HEAT TREATMENT USED ON APPLICATION NEXT ASSY FIN. FINISH SEE NOTE 3			
NASA APPROVAL [Signature]		CODE IDENT NO. 1004719	NASA DRAWING NO. 1004719
MIT APPROVAL [Signature]		SCALE 1/1	SHEET 1 OF 1

1004720	A	(5)
---------	---	-----

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UP GRADED TO CLASS A PER TDRR 12-57/	14 SEP 64	RL JH



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 6061-T6 AL ALLOY PER QQ-A-250/11
- 3 REMOVE BURRS AND BREAK SHARP EDGES .005/.015
4. SURFACE QUALITY  $\sqrt{125}$  ALL OVER
5. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320, CLASS 2, TYPE I, PLATING TO BE .0004 TO .0008 THICK, HARDNESS ROCKWELL C60 MIN. DIMENSIONS APPLY AFTER PLATING. SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
6. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002122 TYPE II, CLASS I, PER ND 1002019
7. IDENTIFY PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		FINI NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DWS. NO.		CONTRACT		
DRAWN <i>J. Bellamy</i>		DATE <i>2/28/64</i>		
CHECKED <i>J. J. Higgins</i>		BY <i>1/28/64</i>		
APPROVAL <i>J. J. Higgins</i>		DATE <i>1/28</i>		
APPROVAL <i>Edna C. Hall</i>		DATE <i>3/4/64</i>		
NASA APPROVAL <i>W. L. ...</i>		DATE <i>3/1/64</i>		
MIT APPROVAL <i>J. J. Higgins</i>		DATE <i>9/1/64</i>		
CODE IDENT NO.		SIZE	NASA DRAWING NO	
_____		C	1004720	
SCALE 1/1		WT	SHEET 1 OF 1	

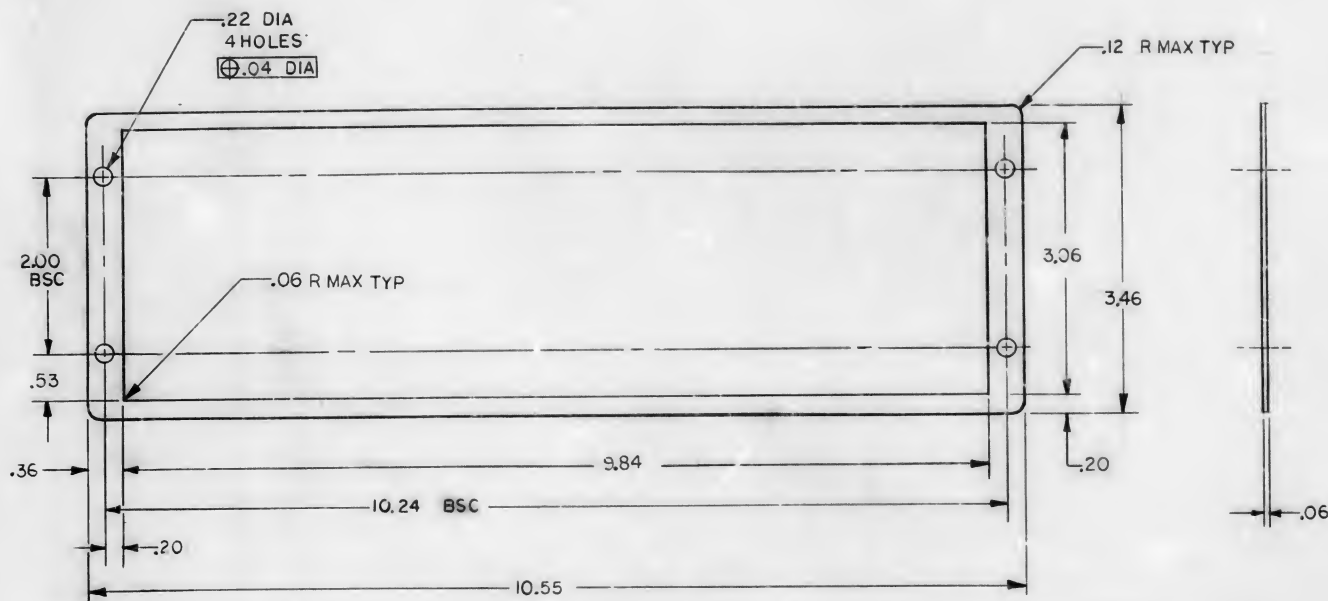
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITE, RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY, NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVERTING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

B

1004721

## REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED AND UP GRADED TO CLASS A PER TDRR 12579	14 SEP 68	JM
B	REVISED PER TDRR 13296	20 SEP 68	JM



## NOTES

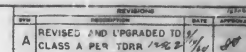
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: WHITE SILICON RUBBER PER MIL-R-5847, CLASS III, GRADE 25
3. IDENTIFY PER ND 1002019

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS. NO. CONTRACT		GASKET ROPE COVER	
DRAWN: <i>[Signature]</i> DATE: <i>2/1/68</i>		CHECKED: <i>[Signature]</i>	
APPROVAL: <i>[Signature]</i> LTB		APPROVAL: <i>[Signature]</i> 10/1/68	
NASA APPROVAL: <i>[Signature]</i> 10/1/68		CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL: <i>[Signature]</i> 9/1/68		SCALE 1/1	WT
APPLICATION		SHEET	OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±.01	±
DO NOT SCALE THIS DRAWING MATERIAL		
SEE NOTE 2		
1003716	HEAT TREATMENT	
NEXT ASSY	USED ON	
FINAL FINISH		

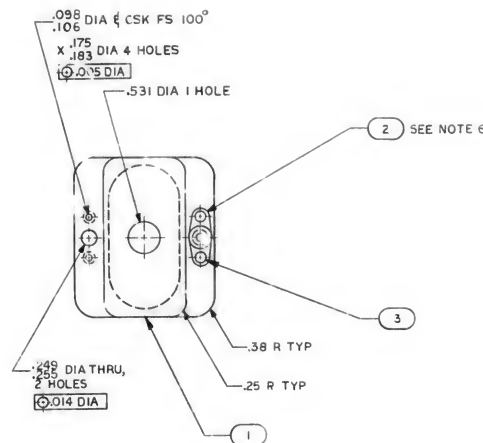
MASTER





1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL: AL ALLOY 7024-T4 PER QQ-A-250/4
3. FINISH: ANODIZE PER MIL-A-8529, TYPE I (CHROMIC ACID) DYED MEDIUM GRAY
4. PAINT FRONT SURFACE AND EDGES WITH (10/0729-1) MEDIUM GRAY EPOXY RESIN ENAMEL PER ND
5. REMOVE BURRS AND BREAK SHARP EDGES .005/.015
6. SURFACE QVAL: 125/ ALL OVER
7. MARK BLACK PER ND 10002019 AND ND 100122 TYPE II, CLASS I, USING 1000271-1, CENTRALLY LOCATE UNLESS OTHERWISE SPECIFIED

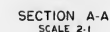
-TYPE R000		PART OR DESCRIPTION NO.		NOMENCLATURE OR DESCRIPTION		PRIORITY	
LIST OF MATERIALS							
NIT Y INSTRUMENTATION LAB COMMUNICATIONS EQUIPMENT CHASSIS APPROVED: <i>[Signature]</i> APPROVED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
ORIGIN: <i>[Signature]</i> DATE: <i>[Signature]</i> DO NOT SCALE THIS DRAWING MATERIAL:				FRONT CLOSE-OUT PANEL AGC COMPUTER			
SEE NOTE 2							
TREATMENT							
0003700				1004723			
NEXT ASBY		USED ON		DATE APPROVED		DATE DRAWING NO. E	
APPLICATION		FINAL FORM		SET APPROVED		SCALE 1/1 WT	
SEE NOTES 3 & 4				SHEET 1 OF 1			



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: ALUMINUM ALLOY 6061-T6 PER QQ-A-250/11
3. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320 CLASS 2, TYPE II  
PLATING TO BE .0004 TO .0008 THICK, HARDNESS: ROCKWELL C60 MIN. DIMENSIONS  
APPLY AFTER PLATING. SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS  
LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
5. UNLESS OTHERWISE SPECIFIED <sup>1/2</sup> ALL OVER
6. INSTALL FIND NO.2 USING FIND NO.3 AFTER PLATING
7. IDENTIFY PER ND 1002019

REVISIONS 12529				
SYM	DESCRIPTION	DATE	APPROVAL	
A	REVISED PER TDAR 13681	11/14/04	[Signature]	
B	REVISED PER TDAR 13686	11/15/04	[Signature]	

4	MS20426A03 - 4	RIVET FLAT HD	3
2	MSA696CBM	NUT, FLOATING ANCHOR	2
1	1004729-1	SHIELD, STANDBY SWITCH AGC	1
QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIN NO.
M.I.T. INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>J. J. Dwyer</i> DATE <i>20 SEP 64</i>		SHIELD, STANDBY SWITCH AGC	
CHECKED BY <i>J. J. Dwyer</i> DATE <i>18 SEP 64</i>			
APPROVAL <i>J. J. Dwyer</i>			
NASA APPROVAL <i>Michael J. ...</i>		CODE IDENT NO. <i>_____</i> SIZE <i>_____</i>	NASA DRAWING NO. <i>1004728</i>
MIT APPROVAL <i>J. J. Dwyer</i>		SCALE <i>1/1</i> WT <i>_____</i>	SHEET <i>_____</i> OF <i>_____</i>



SECTION B-B  
SCALE 2-1

QTY REQ		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIND NO	
				LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES				MATERIALS			
TOLERANCES ON				INSTRUMENTS AND LAB			
FRACTIONS DECIMALS ANGLES				CONTROLS			
FRACTIONS DECIMALS ANGLES				DATE <u>5/20/68</u>			
FRACTIONS DECIMALS ANGLES				CHECKED BY <u>W. J. B. 11-67</u>			
FRACTIONS DECIMALS ANGLES				APPROVED <u>W. J. B. 11-67</u>			
DO NOT SCALE THE DRAWING MATERIAL				REVISIONS			
SEE NOTE 2				NOMINAL DIMENSIONS <u>not comp</u>			
HOT TREATMENT				NASA APPROVAL <u>212, 68-1</u>			
SEE NOTE 3				DATE <u>5-11-67</u>			
DRAWN BY <u>W. J. B.</u>				CODE GENT NO <u>E</u>			
BUT APPROVAL <u>W. J. B. 11-67</u>				NASA DRAWING NO <u>1004729</u>			
1003700		NEXT ASSY		USED ON		APPLICATION	
						SCALE 1" = 1" WT SHEET 1 OF 1	



4

3

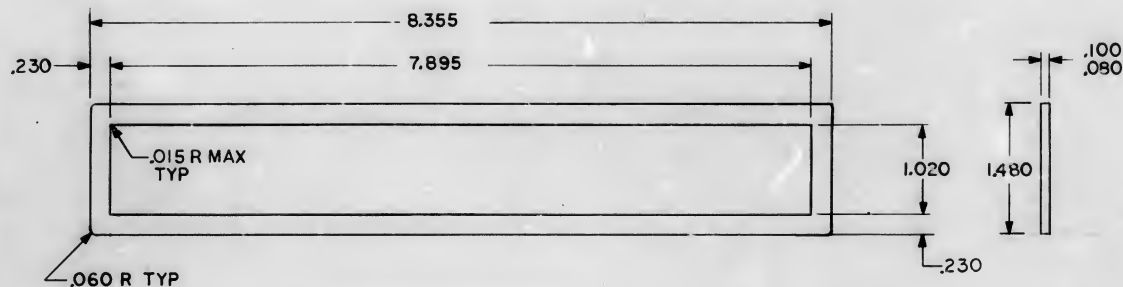
2

1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT TAKES NO RESPONSIBILITY FOR ANY INADEQUACIES, OMISSIONS, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, PROVIDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE CONSIDERED AN ENDORSEMENT OR APPROVAL OF ANY DESIGN, INVENTION, OR ANY OTHER FORM OF INTELLECTUAL PROPERTY, OR ANY RIGHTS OR PERMISSION TO REPRODUCE, COPY, OR SELL ANY PATENTED INVENTION, THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS 13/27

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



## NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: WHITE SILICONE RUBBER PER MIL-R-5847 CLASS II, GRADE 50
3. IDENTIFY PER ND 1002009

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ — $\pm$ .015 $\pm$ — DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE 2
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN	<i>J. G. Gentry Jr.</i>	18 DEC 64	GASKET, 360 PIN CONNECTOR	
CHECKED	<i>L. J. Gentry</i>	25 DEC 64		
APPROVED				
APPROVED	<i>Edmund Hall</i>	18 SEP 65		
APPROVED MIT	<i>W. H. H. H.</i>	9/29/65	CODE IDENT NO.	DRAWING NO.
APPROVED MSC	<i>W. H. H. H.</i>	DATE	SCALE 1/1	1004730
			SHEET 1 OF 1	

4

3

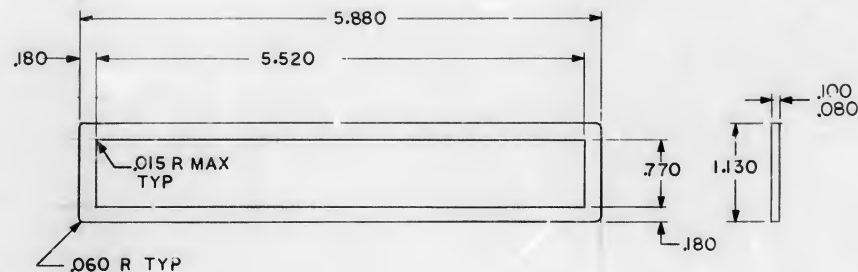
2

1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY VALIDATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PROVIDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE CONSIDERED AN IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, ASSEMBLE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13/27

SYM	ZONE	DESCRIPTION	DP	CHK	DATE	APPROVED

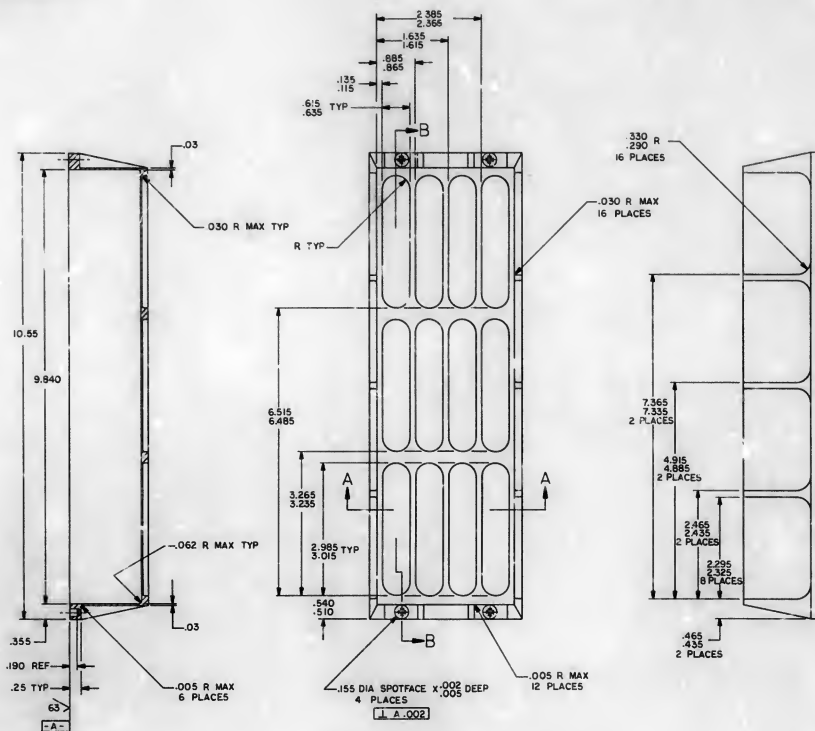


# NOTES:

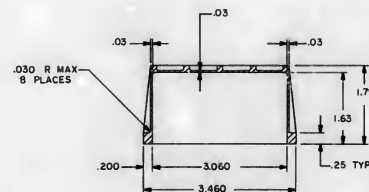
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: WHITE SILICONE RUBBER PER MIL-R-5847 CLASS II, GRADE 50
3. IDENTIFY PER ND 1002009

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>P. Addams</i> 1/8/56		GASKET, 215 PIN CONNECTOR		
CHECKED <i>P. Addams</i> 1/8/56				
APPROVED <i>P. Addams</i> 1/8/56				
APPROVED <i>L. Hagedorn</i> 9/28/64		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>W. J. Rhee</i> 9/28/64			C	1004731
DATE		SCALE 1/1	SHEET 1 OF 1	

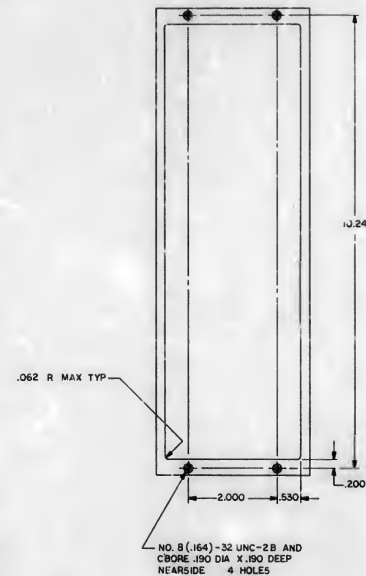
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ — $\pm$ .015 $\pm$ — DO NOT SCALE THIS DRAWING	MATERIAL	SEE NOTE 2
NEXT ASSY	USED ON	
APPLICATION		



SECTION B-B

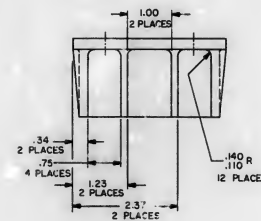


SECTION A-A



.062 R MAX TYP

NO. 8 (164) - 32 UNC-2B AND  
CBORE .190 DIA X .190 DEEP  
NEAR SIDE 4 HOLES



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: CAST ALUMINUM ALLOY 356-T6 PER QQ-A-56, CLASS B
  3. SURFACE QUALITY: UNLESS OTHERWISE SPECIFIED
  4. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320, CLASS 2, TYPE II, PLATING TO BE .0004 TO .0002 THK, ROCKWELL HARDNESS C60 MIN
  5. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/015
  6. ALL DIMENSIONS INCLUDE PLATING
  7. MASK HOLES BEFORE PLATING
  8. IDENTIFY PER NDI002019

PART OR IDENTIFYING NO.		MATERIAL		NOMENCLATURE OR DESCRIPTION		FORM NO.	
1003700		SEE NOTE 2		COVER, ROPE AGC COMPUTER		1004734	
APPROVED BY		APPROVED BY		APPROVED BY		APPROVED BY	
DATE		DATE		DATE		DATE	
SCALE		SCALE		SCALE		SCALE	



1

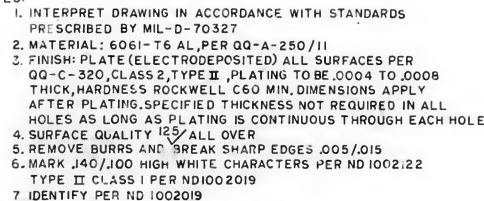
1



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: .050 THK 5052-H32 AL PER QQ-A-250/8
3. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
4. SURFACE QUALITY  $\sqrt{25}$  ALL OVER
5. FINISH: CLEAR ANODIZE PER MIL-A-8625, TYPE II
6. IDENTIFY PER ND 1002019

QTY REQD	PART OR IDENTIFYING NC.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION		FIN NO
LIST OF MATERIALS					
MIT INSTRUMENTAL LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN	<i>[Signature]</i>	8 OCT 64	BRACKET CABLE SUPPORT AGC		
CHECKED	<i>[Signature]</i>	19 OCT 64			
APPROVED					
APPROVED	<i>[Signature]</i>	9 OCT 64			
APPROVED MIT	<i>[Signature]</i>	10 OCT 64	CODE IDENT NO.	SIZE	DRAWING NO.
			_____	C	1004735
APPROVED MSC	<i>[Signature]</i>	10-20-64	DATE	SCALE 4/1	SHEET _____ OF _____

REVISIONS 13673			
SYM	DESCRIPTION	DATE	APPROVAL

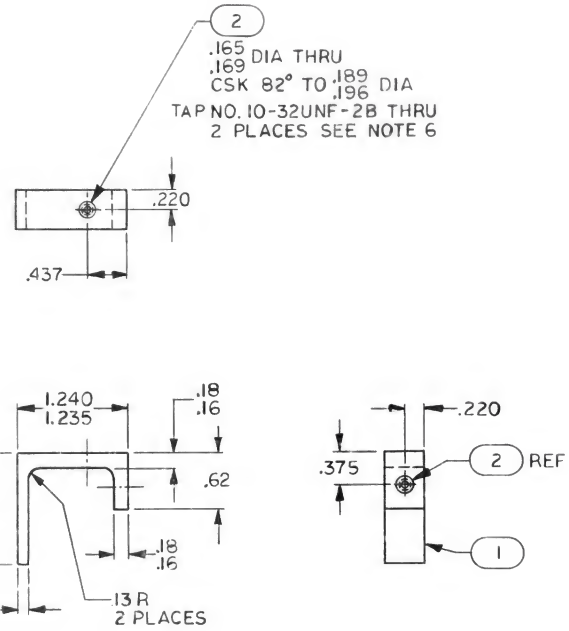


QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIN NO.	
LIST OF MATERIALS							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS    DECIMALS = .XX ± .005 = .XX ± .01		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS EXP. NO.    EMPLOYEET		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>LL</i> DATE <i>5/25/66</i> CHECKED <i>LL</i> BY <i>W. J. ...</i>		MOUNT					
DO NOT SCALE THIS DRAWING		APPROVAL <i>Robert Hall 10/9/68</i>		STBY SW AND P/S CONN			
MATERIAL SEE NOTE 2		NASA APPROVAL <i>W. J. ...</i>		CODE IDENT. NO. —	SIZE D	NASA DRAWING NO. 1004736	
HEAT TREATMENT		MIT APPROVAL <i>W. J. ...</i>		SCALE 1/1	WT	SHEET	OF
NEXT ASSY    USED ON							
FINAL FINISH SEE NOTE 3							
APPLICATION							

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING MATERIAL <b>SEE NOTE 5</b>		M I T INSTRUMENTATION LAB CHAMBER LANE BOSTON, MASS. 02129 DATE <u>10/1/83</u> CONTRACT # DRAWN BY <u>W. J. G. / J. G. / J. G.</u> CHECKED BY <u>W. J. G. / J. G. / J. G.</u> APPROVAL <u>W. J. G. / J. G. / J. G.</u> APPROVAL <u>W. J. G. / J. G. / J. G.</u>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>INSULATOR</b> <b>PHOTOGRAPHIC MASTER</b> FILTER MODULE B5	
1003704 NEXT ASSY USED ON APPLICATION		NASA APPROVAL <u>W. J. G. / J. G. / J. G.</u> MIT APPROVAL <u>W. J. G. / J. G. / J. G.</u>		CODE IDENT NO. <u>D</u> SIZE <u>D</u> NASA DRAWING NO. <b>1004737</b> SCALE <u>4/1</u> W <u>1</u> SHEET <u>1</u> OF <u>1</u>	



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSE THE HOLDING OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OF PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



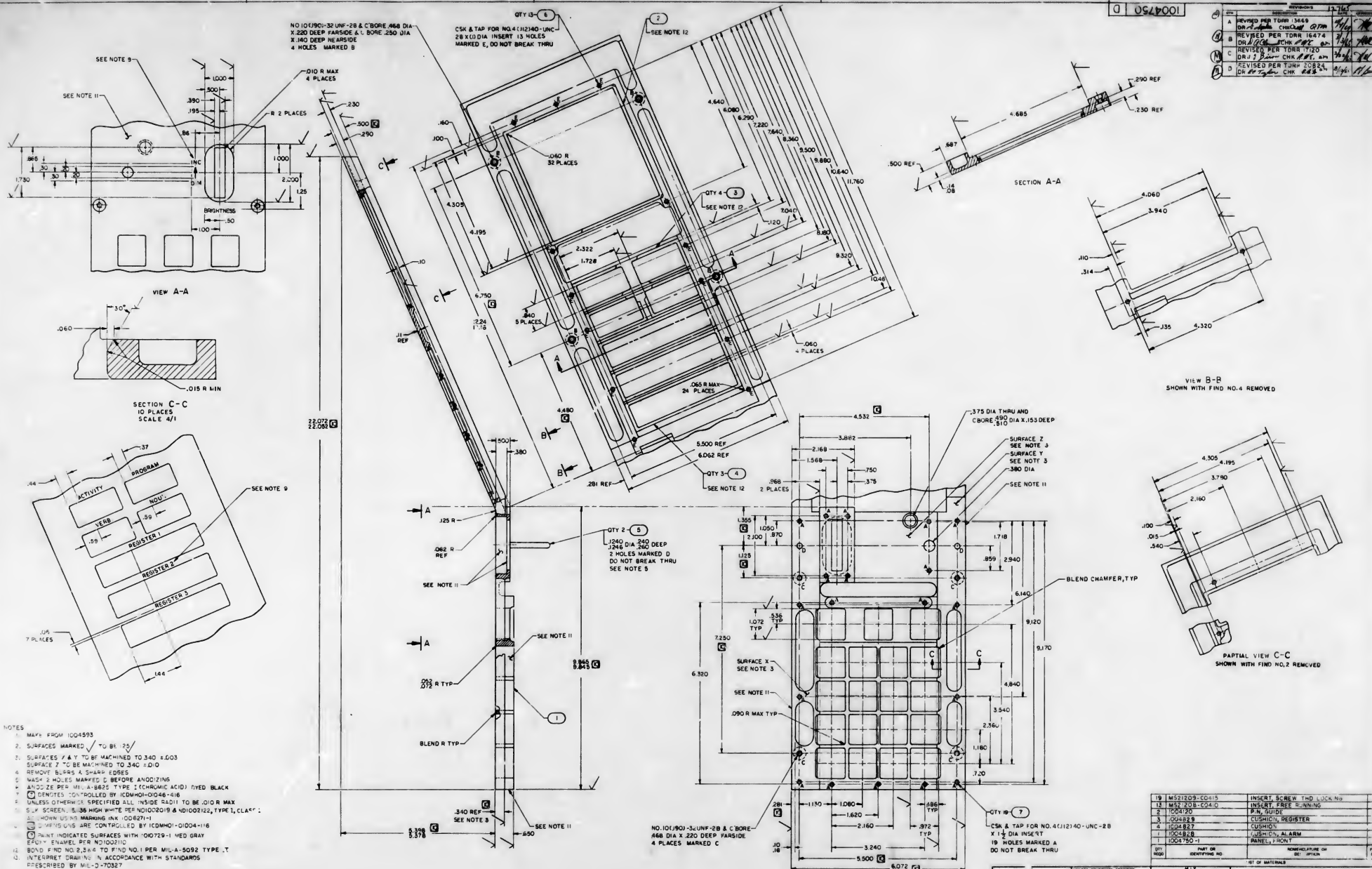
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. MATERIAL: AL 2024-T4 PER QQ-A-250/4
  3. FINISH: ANODIZE PER MIL-A-8625 TYPE II DYED BLACK
  4. REMOVE ALL BURRS AND BREAK SHARP EDGES .005/.015
  5. SURFACE QUALITY 125/
  6. INSTALL FIND NO.2 PER ND 1002121

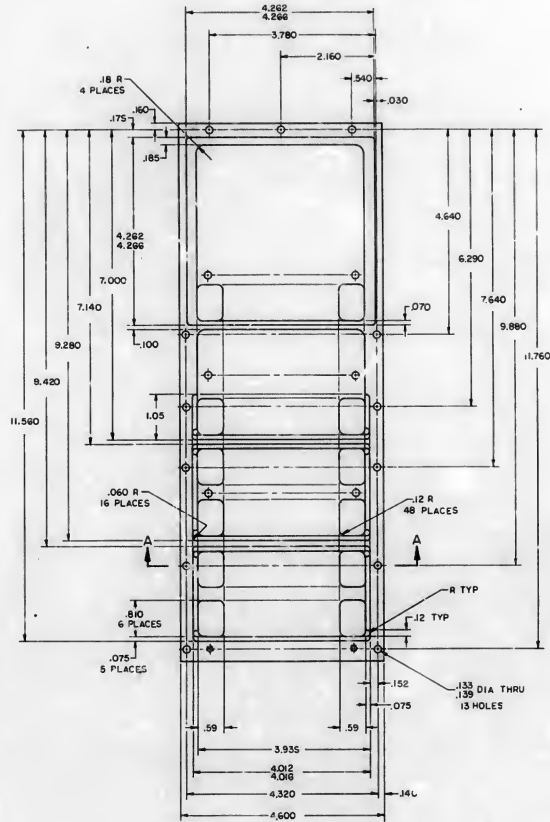
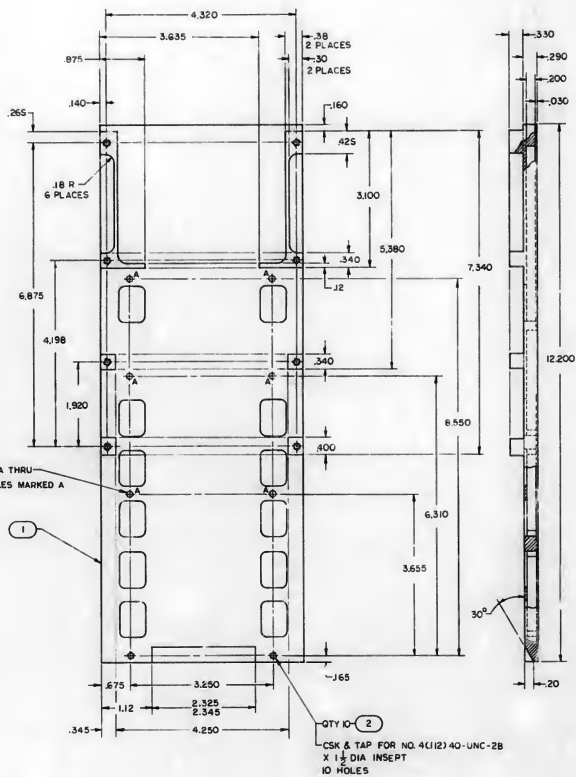
2	1006702-2	INSERT, THREADED, SELF LOCKING	2
1	1004739-001	BRACKET	1
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ .01 .005 .005 DO NOT SCALE THIS DRAWING	
MATERIAL SEE NOTE 2	
1003700	
NEXT ASSY	USED ON
APPLICATION	

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>L. Krahn</i>	5 NOV 64	BRACKET TRAY A AND B AGC COMPUTER	
CHECKED <i>P. R. Lewis</i>	3 NOV 64		
APPROVED			
APPROVED <i>Edna C. Hall</i>	3 NOV 64		
APPROVED <i>W. J. R. Rine</i>	13 NOV 64	CODE IDENT NO.	SIZE
APPROVED <i>W. J. R. Rine</i>	11/18/64		C
DATE	SCALE 1/1	DRAWING NO. 1004739	
SHEET 1 OF 1			

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	MITY METROPLITAN POLICE LAB  DRAWING BY: [Signature] CHECKED BY: [Signature]	MARINE SPECIALTY CENTER HOUSTON, TEXAS
	DO NOT SCALE THIS DRAWING BUT SEE NOTE I	PANEL FRONT ACR DSKY, NAV 100 SERIES	
1003706	NEAT TREATMENT NONE	NASA APPROVAL NO. 80202 J	NASA COUNCIL NO. 1004750
APPROVED FOR	REAL TIME SEE NOTE 6	NET APPROVAL [Signature]	TWENTY





SECTION A-A

# NOTES

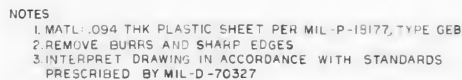
1. MAT'L: 6051-T6 AL PER QQ-A-250, TEMP T6
2. REMOVE BURRS & SHARP EDGES
3. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
5. UNLESS OTHERWISE SPECIFIED ALL INSIDE RADII TO BE .010 R MAX

1004751-1		1004751-1	
QTY		PART OR IDENTIFYING NO.	
RQ		NONEXHAUSTIVE OR DESCRIPTION	
LIST OF MATERIALS			
JULIUS OTHERS SPECIFIED		SITY	
DIMENSIONS ARE IN INCHES		INSTRUMENTATION LAB	
TOLERANCES ON		CONTRACT NO.	
FRACTIONS		DRAWN BY	
DECIMALS		CHECKED BY	
ANGLES		APPROVED BY	
DO NOT SCALE THIS DRAWING		APPROVAL	
SEE NOTE 1		SEE NOTE 3	
HEAT TREATMENT		HIGH APPROVAL	
NONE		HIGH APPROVAL	
NEXT APPR		NEXT APPROVAL	
USED ON		SCALE 1/1	
APPLICATION		SCALE 1/1	

1004751-1		1004751-1	
QTY		PART OR IDENTIFYING NO.	
RQ		NONEXHAUSTIVE OR DESCRIPTION	
LIST OF MATERIALS			
JULIUS OTHERS SPECIFIED		SITY	
DIMENSIONS ARE IN INCHES		INSTRUMENTATION LAB	
TOLERANCES ON		CONTRACT NO.	
FRACTIONS		DRAWN BY	
DECIMALS		CHECKED BY	
ANGLES		APPROVED BY	
DO NOT SCALE THIS DRAWING		APPROVAL	
SEE NOTE 1		SEE NOTE 3	
HEAT TREATMENT		HIGH APPROVAL	
NONE		HIGH APPROVAL	
NEXT APPR		NEXT APPROVAL	
USED ON		SCALE 1/1	
APPLICATION		SCALE 1/1	



004755	B
--------	---

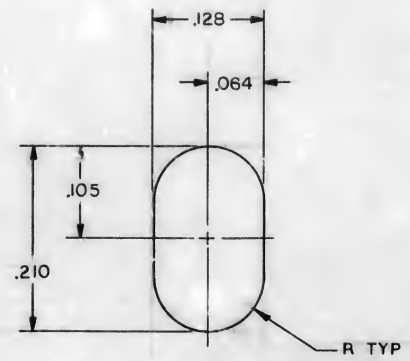
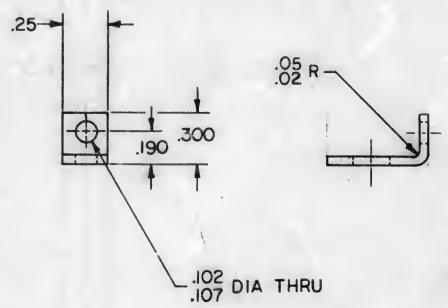
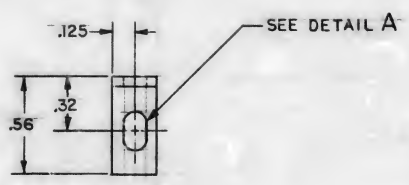


8	7	6	5	4	3	2	
---	---	---	---	---	---	---	--

REVISIONS - THIS DRAWING IS A REVISION OF ANOTHER DRAWING AND SHOULD BE USED ONLY IN CONNECTION WITH A SEPARATELY ISSUED REVISIONS SHEET. THE UNITED STATES GOVERNMENT MAKES NO REPRESENTATION OR WARRANTY AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN, OR THE FACT THAT THE INFORMATION MAY BE RELIABLE. IT IS THE USER'S RESPONSIBILITY TO OBTAIN NECESSARY INFORMATION FROM THE SOURCE OF THE INFORMATION AND TO VERIFY THE INFORMATION BY OTHER MEANS. THE UNITED STATES GOVERNMENT MAKES NO REPRESENTATION OR WARRANTY AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN, OR THE FACT THAT THE INFORMATION MAY BE RELIABLE. IT IS THE USER'S RESPONSIBILITY TO OBTAIN NECESSARY INFORMATION FROM THE SOURCE OF THE INFORMATION AND TO VERIFY THE INFORMATION BY OTHER MEANS.

1004756

REVISIONS 12765  
SYM DESCRIPTION DATE APPROVAL



DETAIL A  
SCALE 10/1

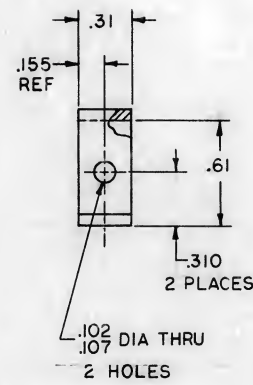
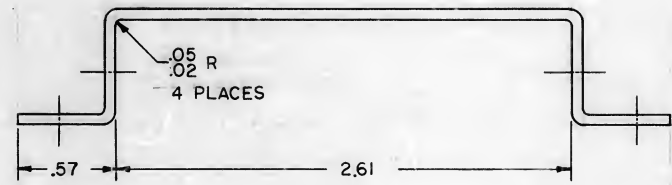
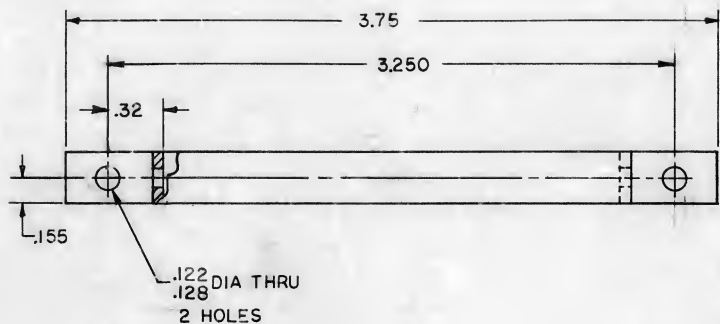
NOTES

1. MATL: .050 THK 5052-H32 AL PER QQ-A-318, TEMP H32
2. REMOVE BURRS & SHARP EDGES
3. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>B. Jensen</i> DATE <i>11/1/64</i>		BRACKET	
CHECKED BY <i>P. Edwards</i> DATE <i>11/1/64</i>		AGC DSKY, NAV	
APPROVAL BY <i>B. Jensen</i> DATE <i>11/1/64</i>		100 SERIES	
APPROVAL BY <i>W. Hall</i> DATE <i>11/1/64</i>		N/A	
1003758	HEAT TREATMENT NONE	NASA APPROVAL BY <i>W. Hall</i> DATE <i>11/1/64</i>	CODE IDENT NO. SIZE C
NEXT ASSY USED ON	FINAL FINISH SEE NOTE 3	MIT APPROVAL BY <i>W. Hall</i> DATE <i>11/1/64</i>	NASA DRAWING NO. 1004756
APPLICATION		MIT APPROVAL BY <i>W. Hall</i> DATE <i>11/1/64</i>	SCALE 2/1 WT SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN TO CONDUCT A CONTRACT, THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE GOVERNMENT. THE GOVERNMENT ASSUMES NO LIABILITY FOR THE USER'S NEGLIGENCE OR FOR THE USER'S FAILURE TO OBTAIN THE NECESSARY PERMISSIONS. THE GOVERNMENT ASSUMES NO LIABILITY FOR THE USER'S NEGLIGENCE OR FOR THE USER'S FAILURE TO OBTAIN THE NECESSARY PERMISSIONS.



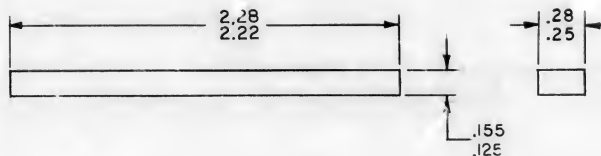
- NOTES
1. MATL: .063 THK 5052-H32 AL PER PER QQ-A-318, TEMP H32
  2. REMOVE BURRS & SHARP EDGES
  3. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
  4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>B. Jensen</i> DATE <i>3/15/64</i>		BRACKET, CABLE AGC DSKY, NAV 100 SERIES	
CHECKED <i>B. Jensen</i> DATE <i>11/16/64</i>			
APPROVAL <i>B. Jensen</i> DATE <i>3/15/64</i>			
APPROVAL <i>B. Jensen</i> DATE <i>3/15/64</i>			
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± .005 ± .01 ± .01		CODE IDENT NO. SIZE NASA DRAWING NO.	
DO NOT SCALE THIS DRAWING		C 1004757	
MATERIAL SEE NOTE 1		SCALE 2/1 WT SHEET 1 OF 1	
HEAT TREATMENT NONE			
FINAL FINISH SEE NOTE 3			
APPLICATION			



NOTES - UNLESS OTHERWISE SPECIFIED, DIMENSIONS, OR OTHER DATA ARE GIVEN FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION. THE UNITED STATES GOVERNMENT THEREBY MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, AND THE FACT THAT THE GOVERNMENT HAS MADE PROVISIONS, PERMITS, OR IN ANY WAY COMPLETES THE SAID DRAWING, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE INTERPRETED AS IMPLICATION OR OTHERWISE AS TO ANY DEFECT, LACKING THE HAZARD OR ANY OTHER PERSON OR CORPORATION, OR COUNTRY, AND ANY OTHER, OR PERMISSION TO REPRODUCE, USE, OR SELL ANY REPRODUCED INFORMATION THAT MAY IN ANY WAY BE RELATED THERETO.

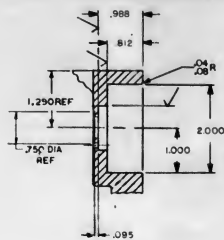


# NOTES

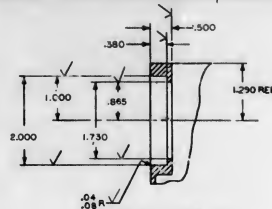
1. MATL: SILICONE RUBBER PER MIL-R-5847  
CLASS IIb, GRADE 40
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327

MASTER

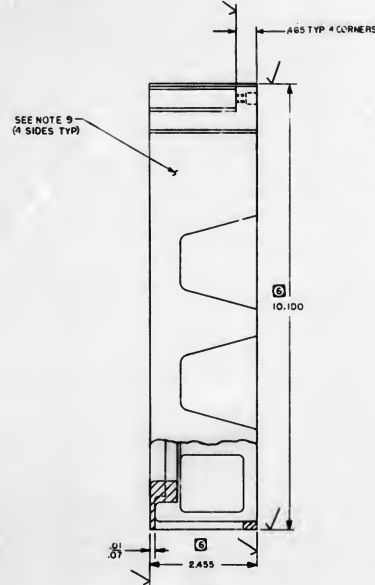
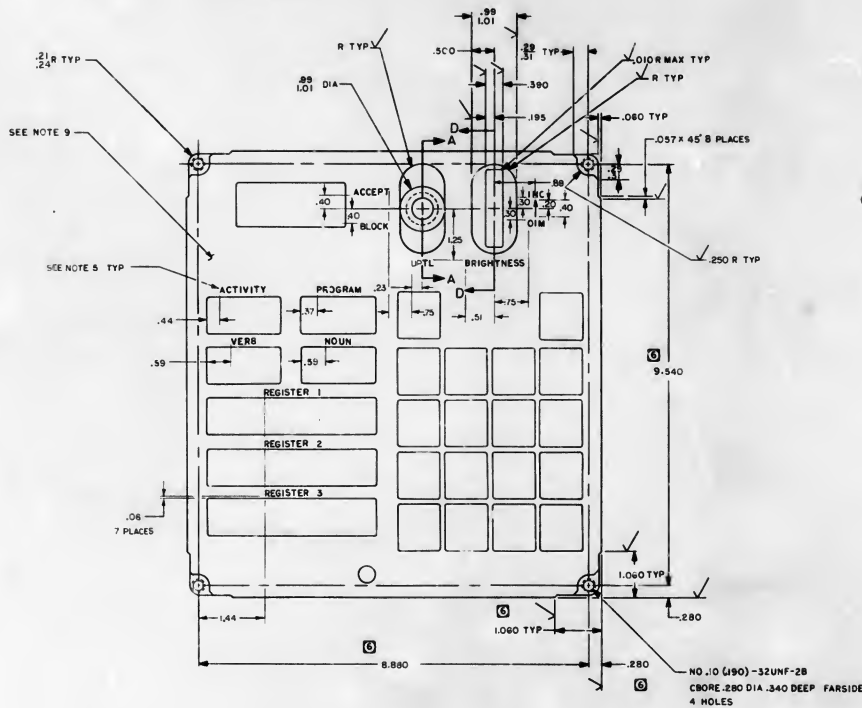
QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>B. Gorman</i> DATE <i>12/15/64</i>				CUSHION, CABLE AGC DSKY, NAV 100 SERIES			
CHECKED <i>P. Edwards</i> DATE <i>12/15/64</i>							
APPROVAL <i>P. Edwards</i> DATE <i>12/15/64</i>							
APPROVAL <i>See Hall 12/22/64</i>				NASA DRAWING NO. 1004758			
1003758		HEAT TREATMENT NONE		NASA APPROVAL <i>W. J. R. 22/64</i>		CODE IDENT NO. SIZE C	
NEXT ASSY USED ON		FINAL FINISH NONE		MIT APPROVAL <i>W. J. R. 22/64</i>		SCALE 2/1 WT	
APPLICATION				MIT APPROVAL <i>W. J. R. 22/64</i>		SHEET 1 OF 1	



PARTIAL SECTION A-A



PARTIAL SECTION D-D



- NOTES
1. MAKE FROM DWG 1004858 <sup>125</sup>
  2. SURFACE MARKED "U" TO BE "V"
  3. REMOVE ALL BURRS AND FILE EDGES
  4. ANOZIDE PER MIL-A-8625, TYPE I CHROMIC-ACID DYE BLACK
  5. SILK SCREEN 12/135 HIGH WHITE PER NID002D19 AND NID00252 TYPE CLASS 148 SHOWN
  6. MARKING APPROXIMATELY WHERE SHOWN
  7. DIMENSIONS ARE CONTROLLED BY 10CMH01-01005-116
  8. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70387
  9. NO TOLERANCES CONTROLLED BY 10CMH01-01046-46
  10. PAINT INDICATED BY 10I0729-2 MEDIUM GREY EPOXY RESIN ENAMEL PER NID002I10
  11. IDENTIFY BY "DRAWING NO. & REVISION PER NID002D19
  12. BOND FIND NO. 4 & 7 TO FIND NO. 3 PER MIL-A-8092 TYPE II
  13. CLAYER'S OF HOLES TO BE LOCATED AT CENTER OF BOND INTERSECTIONS WITHIN .005" T. DO NOT BREAK THRU SIDEWALLS
  14. BOND FIND NO. 9 & 10 TO FIND NO. 9 PER NID002D104, TYPE I
  15. AFTER BONDING, SIZES OF HOLES TO BE FLUSH WITH RB SURFACES OF FIND NO. 11. FLANGES TO BE WITHIN .003"
  16. TOUCH-UP LARF MATE. SURFACES PER NID002D40

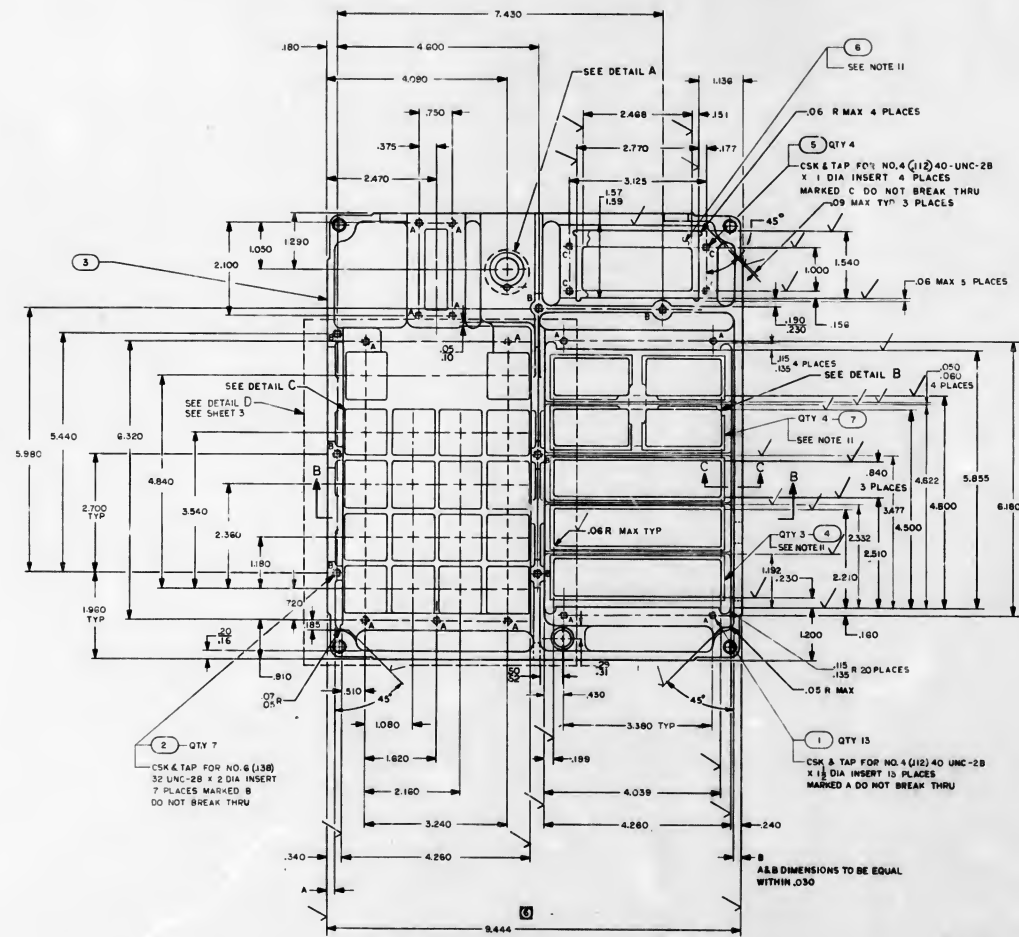
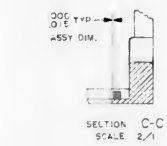
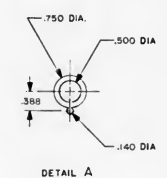
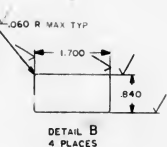
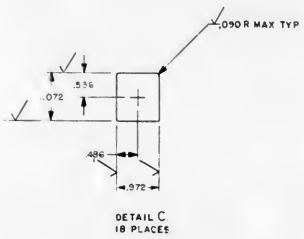
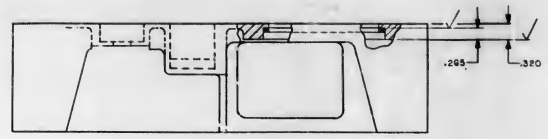
FOR LIST OF MATERIALS SEE SHEET 2

[illegible]

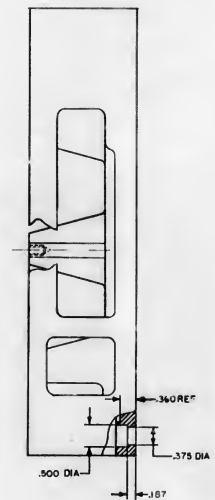
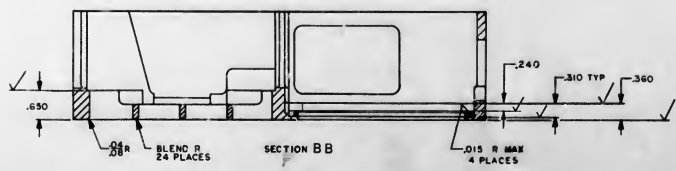
1004759-1  
1004759-2  
1004759-3  
1004759-4  
1004759-5  
1004759-6  
1004759-7  
1004759-8  
1004759-9  
1004759-10  
1004759-11  
1004759-12  
1004759-13  
1004759-14  
1004759-15  
1004759-16  
1004759-17  
1004759-18  
1004759-19  
1004759-20  
1004759-21  
1004759-22  
1004759-23  
1004759-24  
1004759-25  
1004759-26  
1004759-27  
1004759-28  
1004759-29  
1004759-30  
1004759-31  
1004759-32  
1004759-33  
1004759-34  
1004759-35  
1004759-36  
1004759-37  
1004759-38  
1004759-39  
1004759-40  
1004759-41  
1004759-42  
1004759-43  
1004759-44  
1004759-45  
1004759-46  
1004759-47  
1004759-48  
1004759-49  
1004759-50  
1004759-51  
1004759-52  
1004759-53  
1004759-54  
1004759-55  
1004759-56  
1004759-57  
1004759-58  
1004759-59  
1004759-60  
1004759-61  
1004759-62  
1004759-63  
1004759-64  
1004759-65  
1004759-66  
1004759-67  
1004759-68  
1004759-69  
1004759-70  
1004759-71  
1004759-72  
1004759-73  
1004759-74  
1004759-75  
1004759-76  
1004759-77  
1004759-78  
1004759-79  
1004759-80  
1004759-81  
1004759-82  
1004759-83  
1004759-84  
1004759-85  
1004759-86  
1004759-87  
1004759-88  
1004759-89  
1004759-90  
1004759-91  
1004759-92  
1004759-93  
1004759-94  
1004759-95  
1004759-96  
1004759-97  
1004759-98  
1004759-99  
1004759-100

1004759-1

REV	DESCRIPTION	DATE	BY	CHK
A	REVISED PER TORR 11655	11/14/64	W. C.	W. C.
B	REVISED PER TORR 1474	5/14/65	W. C.	W. C.
C	REVISED PER TORR 20445	11/16/64	W. C.	W. C.
D	REVISED PER TORR 20515	11/16/64	W. C.	W. C.
E	REVISED PER TORR 21811	11/16/64	W. C.	W. C.



VIEW SHOWN WITH FIND NO. 8, 9 & 10 REMOVED



SEE NOTE 1

QTY	DESCRIPTION	UNIT	QTY	DESCRIPTION	UNIT
2	1004759-3	EXTENDER, BUS	10		
17	NAS662C2-4	SCREW, T. AT HD, 100	9		
1	1004759-2	EXTENDER, 918			
4	1004817	FLUSH IN			
1	1004830	GASKET			
4	M521218-C0410	INSERT, SCREW, THREAD	5		
3	1004029	CUSHION, REGISTER	4		
1	1004759-1	HOUSING, FRONT PANEL	1		
7	M521209-C0620	INSERT, SCREW, THREAD	2		
13	M521209-C0415	INSERT, SCREW, THREAD	1		

1003707		NEXT APPR		DATE		PAGE		FURNISH		APPLICATION	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON DIMENSIONS		FRACTIONS		DECIMALS		ROUNDED	
DO NOT SCALE THIS DRAWING		UNLESS OTHERWISE SPECIFIED		MATERIALS		SPECIFICATIONS		DRAWING		DATE	
1003707		NEXT APPR		DATE		PAGE		FURNISH		APPLICATION	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON DIMENSIONS		FRACTIONS		DECIMALS		ROUNDED	
DO NOT SCALE THIS DRAWING		UNLESS OTHERWISE SPECIFIED		MATERIALS		SPECIFICATIONS		DRAWING		DATE	
1003707		NEXT APPR		DATE		PAGE		FURNISH		APPLICATION	

HOUSING, FRONT PANEL  
AGC DSKY MAIN 100 SERIES  
80230 E  
1004759



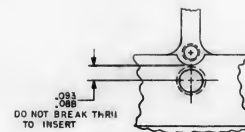
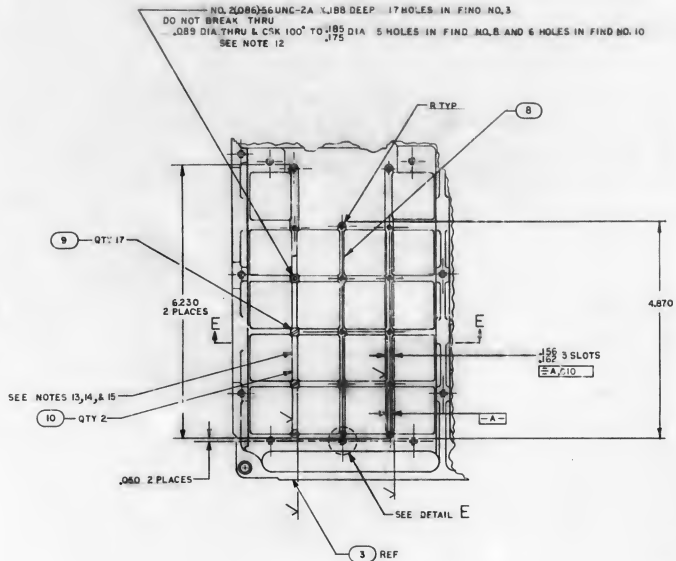
6



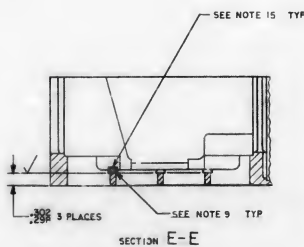
PART NO.	DIM. A
1004759-2	4.870*
1004759-3	6.230*

NOTES  
1. MAT'L 1/25 THK 6061-T6 ALUM./Q-Q-A-250/II  
2. REMOVE BURRS AND SHARP EDGES .005/2015  
3. \* INDICATES NOMINAL DIMENSION, TO FIT AT ASSEMBLY.

EXTENDER, RIB  
1004759-2  
1004759-3  
SCALE 1/1



DETAIL E  
SCALE 4/1

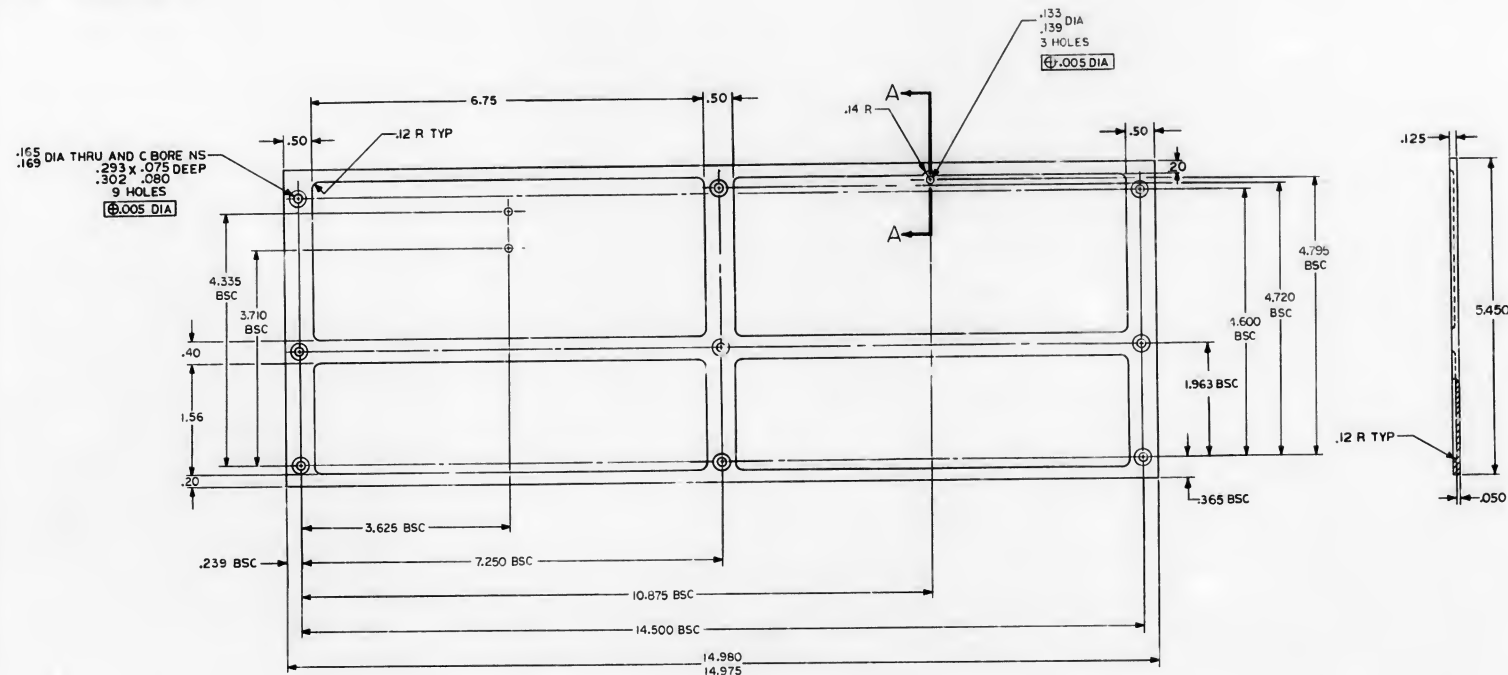


© THIS SHEET ADDED

REV.	DESCRIPTION	DATE	BY
C	THIS SHEET ADDED PER TORR 21551	10/1/91	RAY
D	REVISED PER TORR 20348 DR & PO	11/1/91	RAY
E	REVISED PER TORR 21551 DR & PO	11/1/91	RAY

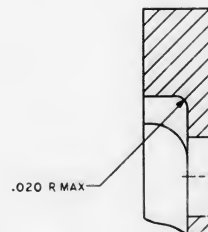
QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG. NO.
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
HOUSING, FRONT PANEL			
AGC DSKY MAIN 100 SERIES			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ±.005 ±.2		DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature]	
NEXT APP. USED ON		NADA APPROVAL: [Signature]	
APPLICATION		NADA DRAWING NO. 80230 E 1004759	
SCALE 1/1		SHEET 3 OF 3	

REVISIONS 20569			
SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: 6061-T6 ALUMINUM, PER QQ-A-250/11
3. SURFACE QUALITY: 125 ALL OVER
4. REMOVE ALL BURRS AND BREAK SHARP EDGES -.005/.015
5. FINISH: PLATE (ELECTRODEPOSITED) ALL SURFACES PER QQ-C-320, CLASS 2, TYPE II PLATING TO BE .0004 TO .0008 THICK, HARDNESS ROCKWELL C60 MIN. DIMENSIONS APPLY AFTER PLATING. SPECIFIED THICKNESS NOT REQUIRED IN ALL HOLES AS LONG AS PLATING IS CONTINUOUS THROUGH EACH HOLE
6. IDENTIFY WITH DRAWING NO. AND REVISION PER NDI002019



SECTION A-A  
SCALE 10/1

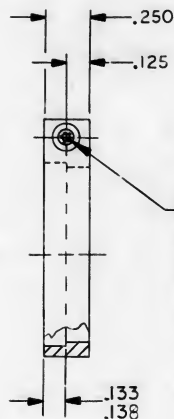
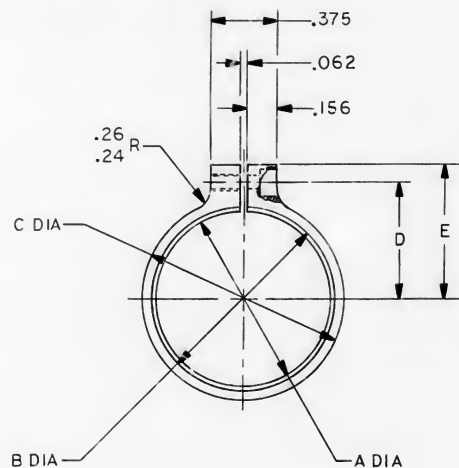
[illegible]

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PUBLISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFESSING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS

24773

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



DASH NO.	A DIA	B DIA	C DIA	D	E
- 001	1.031	1.074	1.140	.640	.750
- 002	.676	.737	.803	.425	.520

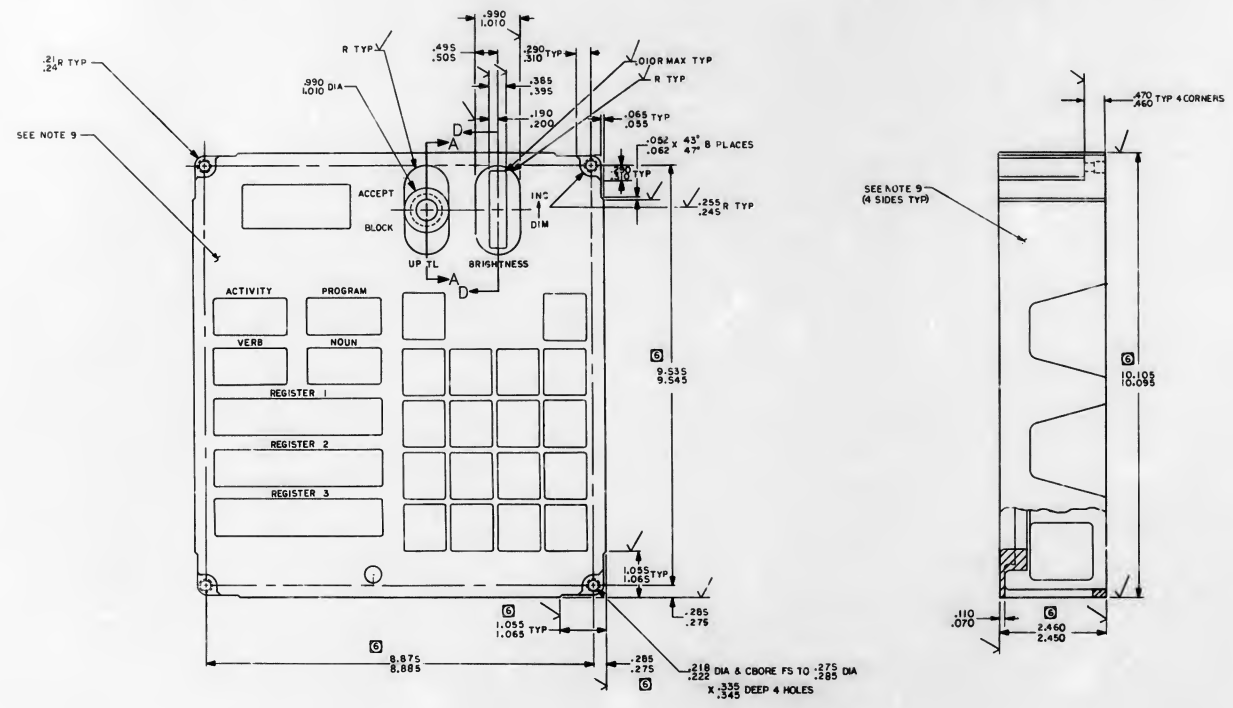
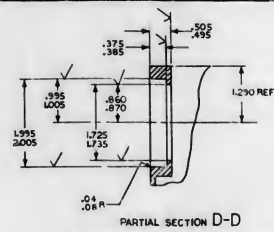
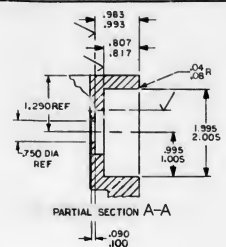
# NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. REMOVE BURRS AND SHARP EDGES .005/.015
3. IDENTIFY WITH DRAWING NO. PER ND 1002019
4. CHROMATE PER MIL-C-5541 EXCEPT COATING TO BE ELECTRICALLY CONDUCTIVE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>K. Simpson</i> 20 SEP 65		CLAMP, SUBMINIATURE CONNECTOR		
CHECKED <i>J. P. Grogan</i> 22 SEP 65				
APPROVED <i>S. C. Hall</i> 20 SEP 65				
APPROVED <i>W. P. Grogan</i> 21 SEP 65		CODE IDENT NO	SIZE	DRAWING NO.
APPROVED <i>A. C. METZGER</i>		80230	C	1004781
DATE		SCALE	NONE	SHEET 1 OF 1



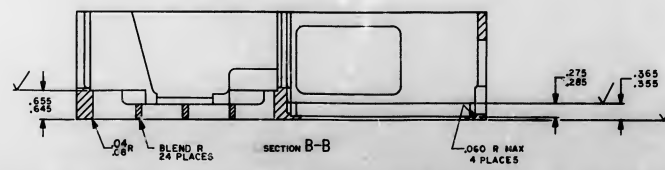
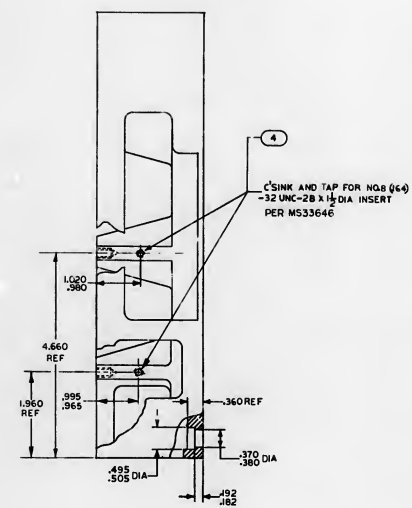
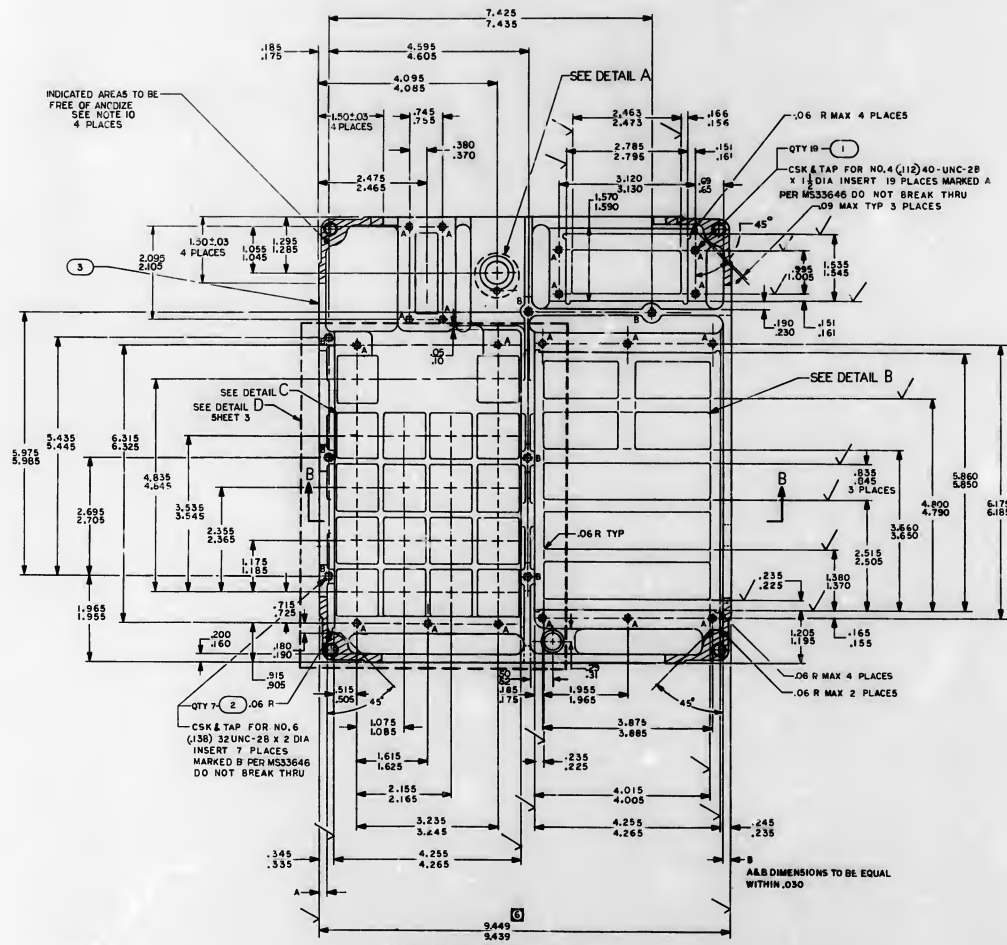
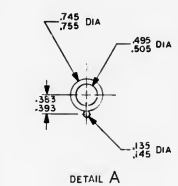
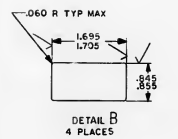
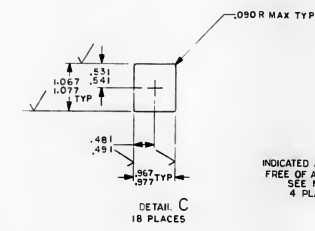
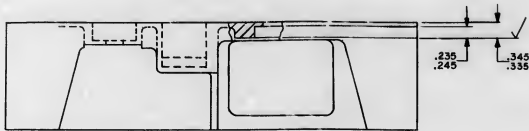




- NOTES
1. MAKE FROM DWG 1004586 <sup>12/3</sup>
  2. SURFACE MARKED ✓
  3. REMOVE ALL BURS AND SHARP EDGES
  4. REMOVE PER MIL-A-8625, TYPE I CHROMIC-ACID DYED BLACK, EXCEPT INDICATED AREAS
  5. SILK SCREEN 12 HIGH WHITE PER NID00209 LOCATE MARKING APPROXIMATELY WHERE SHOWN
  6. (1) DIMENSIONS ARE CONTROLLED BY ICD-MHO-I-01205-116
  7. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  8. IDENTIFY WITH PART NO. PER NID00209
  9. PAINT INDICATED SURFACES WITH 100880"-1 DARK GREY EPOXY RESIN ENAMEL PER NID 10270
  10. FINISH UP BASE MATERIAL SURFACES PER NID 00204, EXCEPT DO NOT FINISH CONT AREAS
  11. TERMINES OF HOLES TO BE LOCATED AT CENTER OF RIB INTERSECTIONS
  12. BOND FIND NO. 5, 6, 7, 8, 9, 10 PER NID00204, TYPE I
  13. AFTER MACHINING, SIDES OF FIND NO. 5, 6, 7 TO BE FLUSH WITH RIB SURFACES OF FIND NO. 3, FLATNESS TO BE WITHIN .003

2	1004785	003	RIB, EXTENDED	7
17	NAS66272	-4	SCREW, FLAT HD	4
1	1004785	002	RIB, EXTENDED	2
1	MS21209	CUB15	INSERT, HELICAL	1
1	1004785	001	MOUNTING FLAT PANEL	3
7	MS21209	CS20	INSERT HELICAL	2
19	MS21209	CO415	INSERT HELICAL	1
QTY	PART OR		NOMENCLATURE OR	ING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING MATERIALS		MET INSTRUMENTATION LAB DRAWN BY <u>W. J. HARRIS</u> DATE <u>10/2/78</u> CHECKED BY <u>W. J. HARRIS</u> SAFETY APPROVAL <u>W. J. HARRIS</u> 2/10/78		LPT OF ASSEMBLY MANAGED SPACECRAFT CENTER HOUSTON, TEXAS	
SEE NOTE 1		HOUSING, FRONT PANEL AGC DSKY MAIN			
1003568	REPT TEST/INSPECTION NONE	REPT APPROVAL A. C. METCALF	COOP DESK NO. 1 80230	REPT DRAWING NO. 1004785	E
REPT APPR APPLICATION	USED ON SEE NOTES 4 & 11	REPT APPROVAL <u>W. J. HARRIS</u> MET APPROVAL <u>W. J. HARRIS</u>	SCALES 1/1	SHEET 1 OF 3	



UNLESS OTHERWISE SPECIFIED CHANGES ARE IN INCHES TOLERANCES ARE IN INCHES DIMENSIONS IN DECIMALS    ANGLES ° DO NOT SCALE THIS DRAWING - UNLESS -		DTG RECD PART OR IDENTIFYING NO. DATE INSTRUMENTATION LAB NAME DATE ORDERED APPROVED APPROVED	PART OR DESCRIPTION NUCLEONIC OR DESCRIPTION LIST OF MATERIALS MANAGED SPACECRAFT CENTER HOUSING HEAD HOUSING, FRONT PANEL ASC DSKY MAIN	PART NO. SIZE QTY SHEET 2 OF 5
NEXT ASSEMBLY USED ON APPLICATION	NEXT TOLERANCE DATA APPROVAL SET APPROVAL SET APPROVAL	DATE ORDERED APPROVED APPROVED	HOUSING, FRONT PANEL ASC DSKY MAIN	DATE ORDERED APPROVED APPROVED



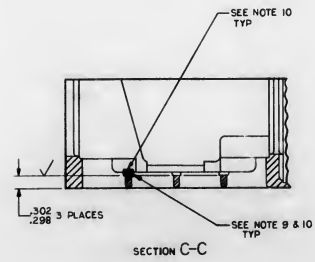
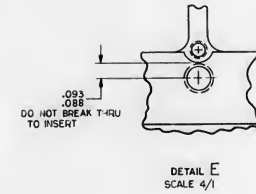
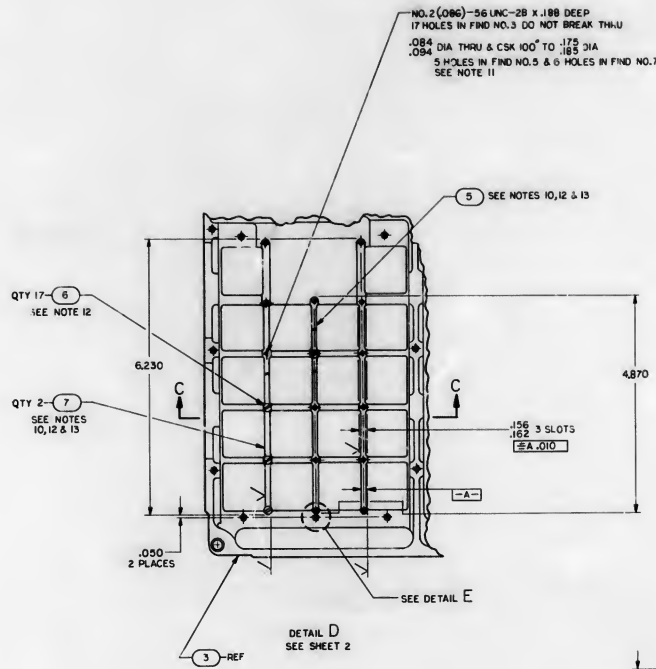
NOTES: 1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.  
2. DIMENSIONS ARE IN INCHES.  
3. DIMENSIONS ARE IN INCHES.  
4. DIMENSIONS ARE IN INCHES.  
5. DIMENSIONS ARE IN INCHES.  
6. DIMENSIONS ARE IN INCHES.  
7. DIMENSIONS ARE IN INCHES.  
8. DIMENSIONS ARE IN INCHES.  
9. DIMENSIONS ARE IN INCHES.  
10. DIMENSIONS ARE IN INCHES.



QTY NO.	ITEM
1004785-002	14670
1004785-003	14630

- NOTES
1. MATL: J25 THK 6061-T6 AL PER QQ-A-250/11, TEMP 6
  2. REM: VE BUDS AND SHARP EDGES .005/.015
  3. \* INDICATES NOMINAL DIMENSION TO FIT AT ASSEMBLY

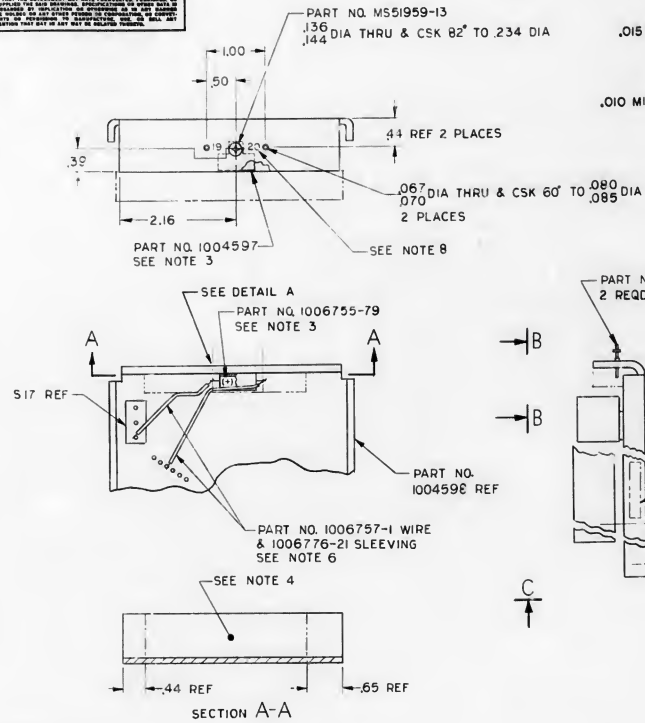
1004785-002
1004785-003



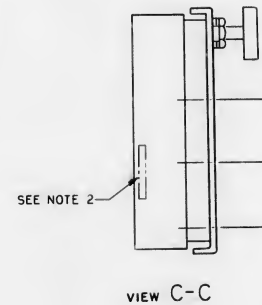
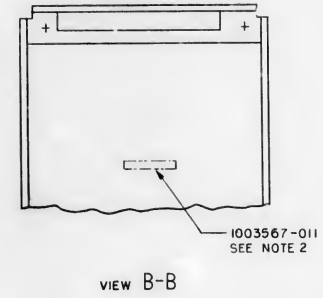
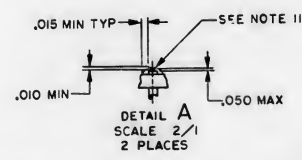
QTY # 10	PART OR IDENTIFYING NO	DESCRIPTION OR DESCRIPTION	FIND NO
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES "X" ".005" "± 2"		MTC INSTRUMENTATION LAB CHECKED BY: [Signature] APPROVAL: [Signature]	
DO NOT SCALE THIS DRAWING		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
MATERIAL		HOUSING, FRONT PANEL AGC DSKY MAIN	
HEAT TREATMENT		CODE IDENT NO: 80230 E	
NEXT APP: USED ON		DATE: 1/1	
APPLICATION		DRAWING NO: 1004785	
FINAL TEST		SHEET 3 OF 3	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS FOR DECIMALS ANGLES IS .005 OF 1/16" IS 2° DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON:	
APPLICATION		

NOTICE: WHEN ASSIGNED PERSONAL SPECIFICATIONS, DO NOT ADD ANY OTHER SPECIFICATIONS. THE ASSIGNED PERSONAL SPECIFICATIONS ARE THE ONLY SPECIFICATIONS TO BE USED. THE ASSIGNED PERSONAL SPECIFICATIONS ARE THE ONLY SPECIFICATIONS TO BE USED. THE ASSIGNED PERSONAL SPECIFICATIONS ARE THE ONLY SPECIFICATIONS TO BE USED.



- NOTES
1. MAKE FROM KEYBOARD MOD ASSY DWG NO. 1003549
  2. RE-IDENTIFY WITH PART NO. AS SHOWN IN ACCORDANCE WITH R. I. B.
  3. BOND 1006755-79 TO 1004597 AND 1004597 TO 1004598 PER ND1002004, TYPE V
  4. ENCAPSULATE INDICATED AREA PER ND1002217
  5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  6. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
  7. WORKMANSHIP, FABRICATION & INSPECTION REQUIREMENTS PER ND1002069
  8. MARK .08 HIGH WHITE PER ND1002019 & ND1002122, TYPE II, CLASS 1 USING MARKING INK 1006271-1 APPROX AS SHOWN
  9. REMOVE TERMINAL MARKING NO. 8 & 15
  10. + DENOTES POSITIVE SIDE OF CAPACITOR
  11. CUT TERMINALS 19 AND 20 AS SHOWN AND ENCAPSULATE PER ND1002004 TYPE VI



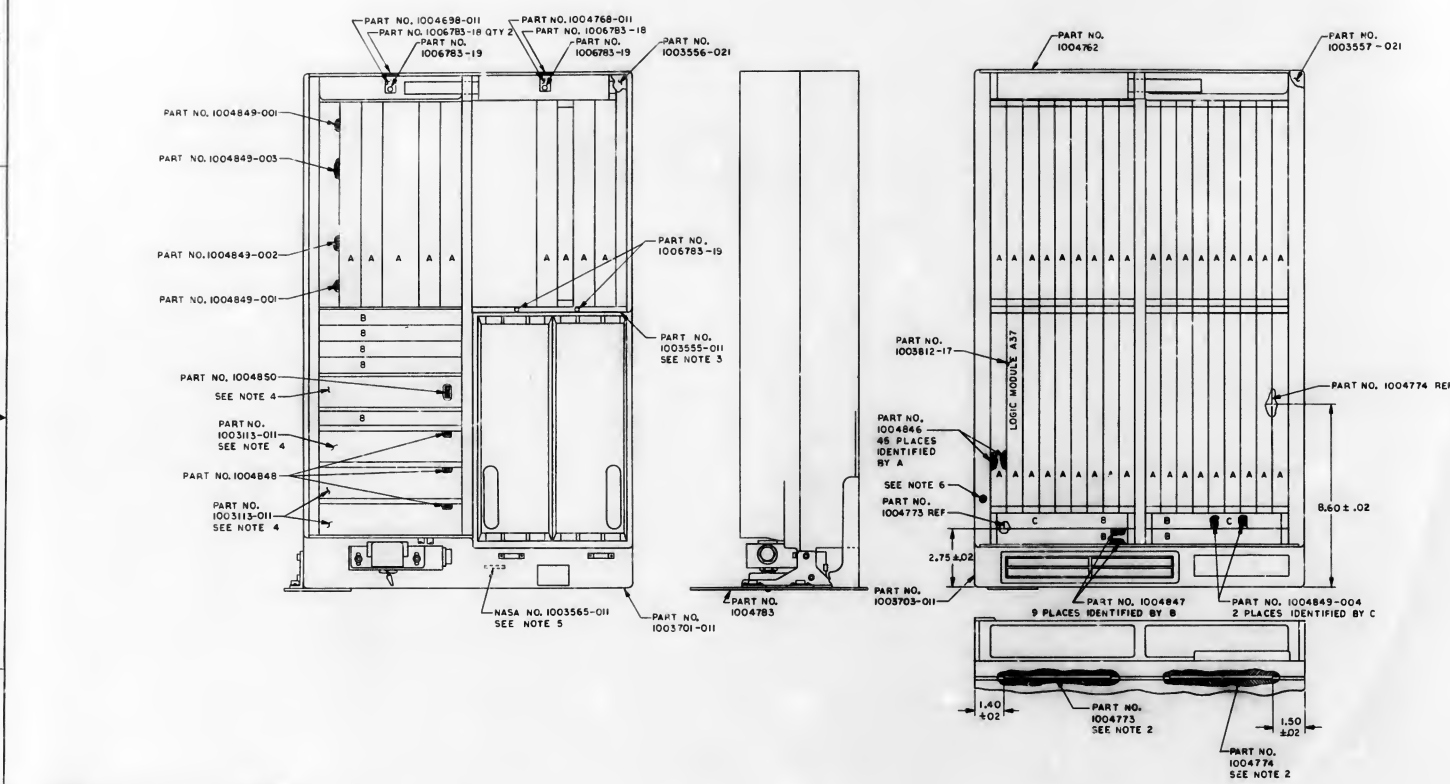
REVISIONS				
REV	ZONE	DESCRIPTION	OR	CHK
239	PD			

PART NO. 1004784  
PART NO. 1003567-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	2. 10/65	10/65	INSTRUCTION DRAWING FOR KIT NO 8104118	
CHECKED	10/65	10/65	KEYBOARD MODULE ASSEMBLY '18	
APPROVED	10/65	10/65	AGC DSKY, MAIN	
APPROVED	10/65	10/65	DRAWING NO. 1004792	
APPROVED	10/65	10/65	CODE IDENT NO. 80230 D	
APPROVED	10/65	10/65	DATE SCALE 1/1	
APPROVED	10/65	10/65	SHEET 1 OF 1	



1. MAKE FROM COMPUTER ASSY DRAWING NO. 1003700-011  
2. BOND PART NO. 1004773 AND 1004774 TO ENCAPSULATED SURFACE OF PART NO. 1003703-011 USING MIL-A-5092 TYPE II PRIOR TO ASSEMBLY OF PART NO. 1003703-011  
3. ASSEMBLE PART NO. 1003555-011 TO PART NO. 1003701-011 PRIOR TO ASSEMBLY OF PART NO. 1003701-011 TO PART NO. 1003703-011  
4. TORQUE MTG SCREWS OF PART NO. 1003819-011 AND OSCILLATOR MODULE PART NO. 1003527 REF TO 4/6 INCH POUNDS  
5. RE-IDENTIFY WITH PART NO. 1003565-011 IN ACCORDANCE WITH R.I.B.  
6. TORQUE MTG SCREWS (MS16906-13 REF) TO 25/32 INCH POUNDS 22 PLACES  
7. UNLESS OTHERWISE SPECIFIED TORQUE ALL MODULE MTG SCREWS 15/19 INCH POUNDS  
8. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

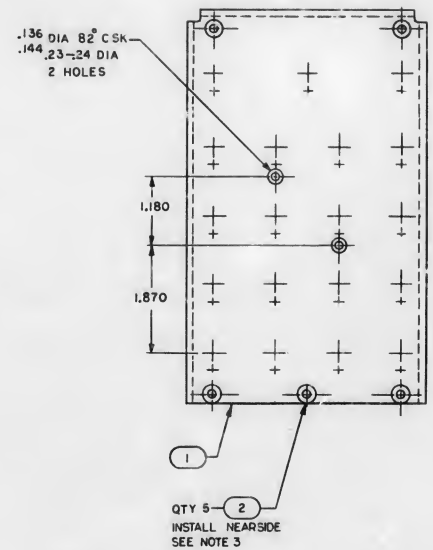
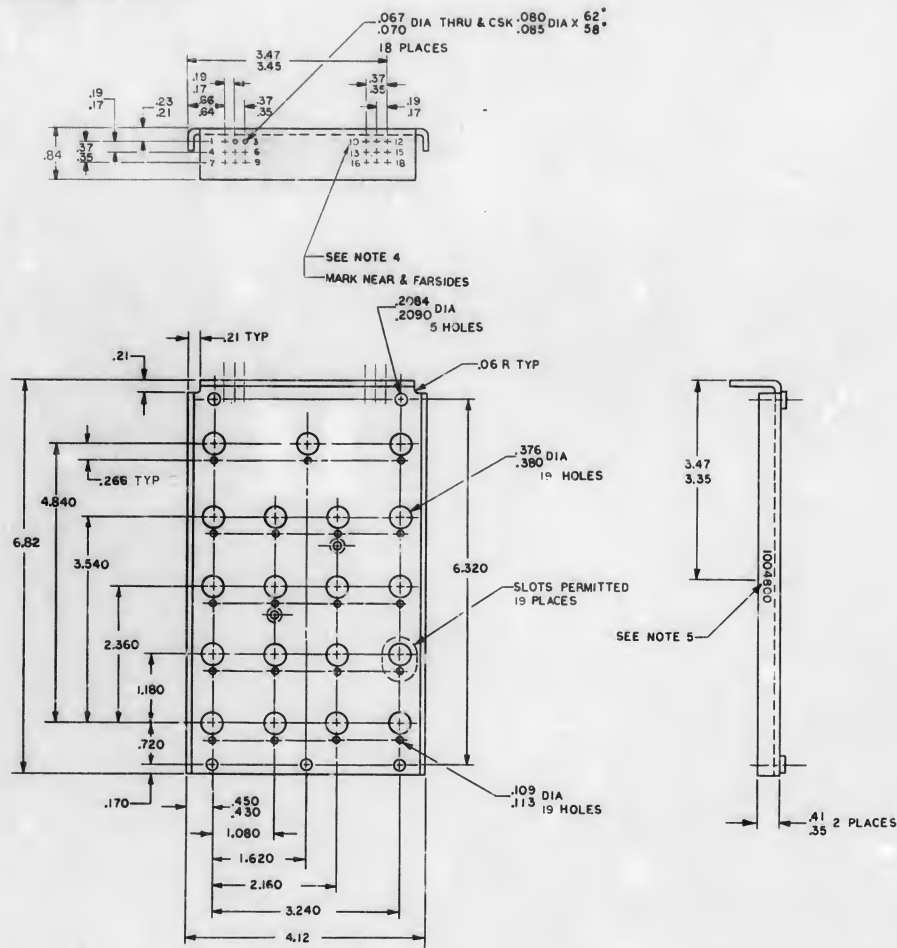


NOTES

1. MAKE FROM COMPUTER ASSY DRAWING NO. 1003700-011
2. BOND PART NO. 1004773 AND 1004774 TO ENCAPSULATED SURFACE OF PART NO. 1003703-011 USING MIL-A-5092 TYPE II PRIOR TO ASSEMBLY OF PART NO. 1003703-011
3. ASSEMBLE PART NO. 1003555-011 TO PART NO. 1003701-011 PRIOR TO ASSEMBLY OF PART NO. 1003701-011 TO PART NO. 1003703-011
4. TORQUE MTG SCREWS OF PART NO. 1003819-011 AND OSCILLATOR MODULE PART NO. 1003527 REF TO 4/6 INCH POUNDS
5. RE-IDENTIFY WITH PART NO. 1003565-011 IN ACCORDANCE WITH R.I.B.
6. TORQUE MTG SCREWS (MS16906-13 REF) TO 25/32 INCH POUNDS 22 PLACES
7. UNLESS OTHERWISE SPECIFIED TORQUE ALL MODULE MTG SCREWS 15/19 INCH POUNDS
8. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

PART NO. 100355-011

QTY 1000		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS		MATERIALS		MATERIALS		MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONS DECIMALS ANGLES CHECKED <i>Chadwick 11/14/67</i> DO NOT SCALE THIS DRAWING DATE: <i>11/14/67</i>		APPROVAL <i>Chadwick 11/14/67</i>		APPROVAL <i>Chadwick 11/14/67</i>		APPROVAL <i>Chadwick 11/14/67</i>	
HEAT TREATMENT		NASA APPROVAL		NASA APPROVAL		NASA APPROVAL	
NEXT ASST USED ON		TOTAL FRSH		TOTAL FRSH		TOTAL FRSH	
APPLICATION		APPLICATION		APPLICATION		APPLICATION	
MANNED SPACECRAFT CENTER HOUSTON, TEXAS		INSTRUCTION DRAWING FOR KIT NO. 8104119 COMPUTER ASSY		INSTRUCTION DRAWING FOR KIT NO. 8104119 COMPUTER ASSY		INSTRUCTION DRAWING FOR KIT NO. 8104119 COMPUTER ASSY	
80230 E		80230 E		80230 E		80230 E	
SCALE NONE INT		SCALE NONE INT		SCALE NONE INT		SCALE NONE INT	
SHEET 1 OF 1		SHEET 1 OF 1		SHEET 1 OF 1		SHEET 1 OF 1	



- NOTES:
1. MAT'L .090 THK AL5052-H32 PER QQ-A-318, TEMPER H32
  2. REMOVE BURPS AND SHARP EDGES
  3. INSTALL FINE NO.2 AND ANODIZE PER MIL-A-8625, TYPE I (CHROMIC ACID), DYED BLACK
  4. MARK .08 HIGH WHITE PER ND10070; # ND100212, TYPE II, CLASS I, APPROX WHERE SHOWN
  5. MARK .12 HIGH WHITE PER ND10070; # ND100212, TYPE II, CLASS I
  6. ALL BEND R.0500
  7. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70, 27

5	1004601	SPACER	2
1	1004800-1	PANEL, FRONT	
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO.
LIST OF MATERIALS			
M1Y INSTRUMENTATION LAB Cassini West, Kansas		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DESIGNED <i>By [Signature]</i> DATE <i>2/2/64</i> CHECKED <i>[Signature]</i> APPROVED <i>[Signature]</i> <i>2/2/64</i> APPROVAL <i>[Signature]</i>		PANEL, FRONT KEYBOARD MODULE AGC DSKY, NAV 100 SERIES	
NASA APPROVAL <i>[Signature]</i> <i>2/2/64</i> MIT APPROVAL <i>[Signature]</i> MIT APPROVAL <i>[Signature]</i>		CODE IDENT NO. <i>D</i> SIZE <i>1004800</i>	NASA DRAWING NO. 1004800
SCALE 1/1		WT	SHEET 1 OF 1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		FRACTIONS      DECIMALS
		± .07      ± .005
		DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE 1
1003806		HEAT TREATMENT
		NONE
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		SEE NOTE 3

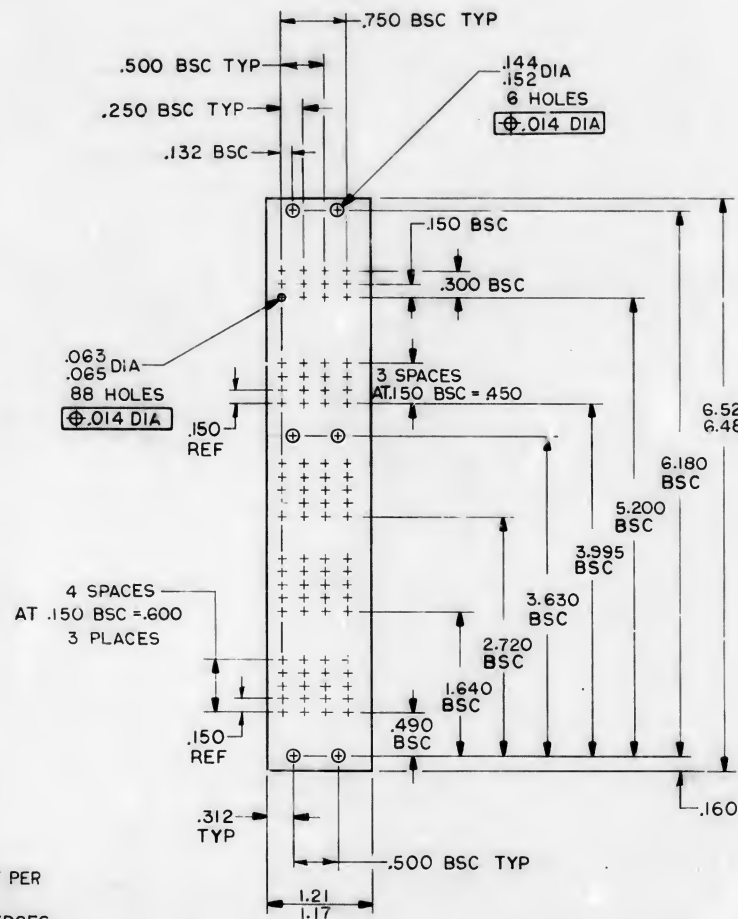




NOTICE -- WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELIBERATE OR UNDELIBERATE ERROR, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE USER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHT OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY INVENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1004803

REVISIONS 13222			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16112 DR G. J. Biron CHK R.A.E. am	2/19/65	HAC



# NOTES

1. MATL: .094 THK PLASTIC SHEET PER MIL-P-18177, TYPE GEB
2. REMOVE BURRS AND SHARP EDGES
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

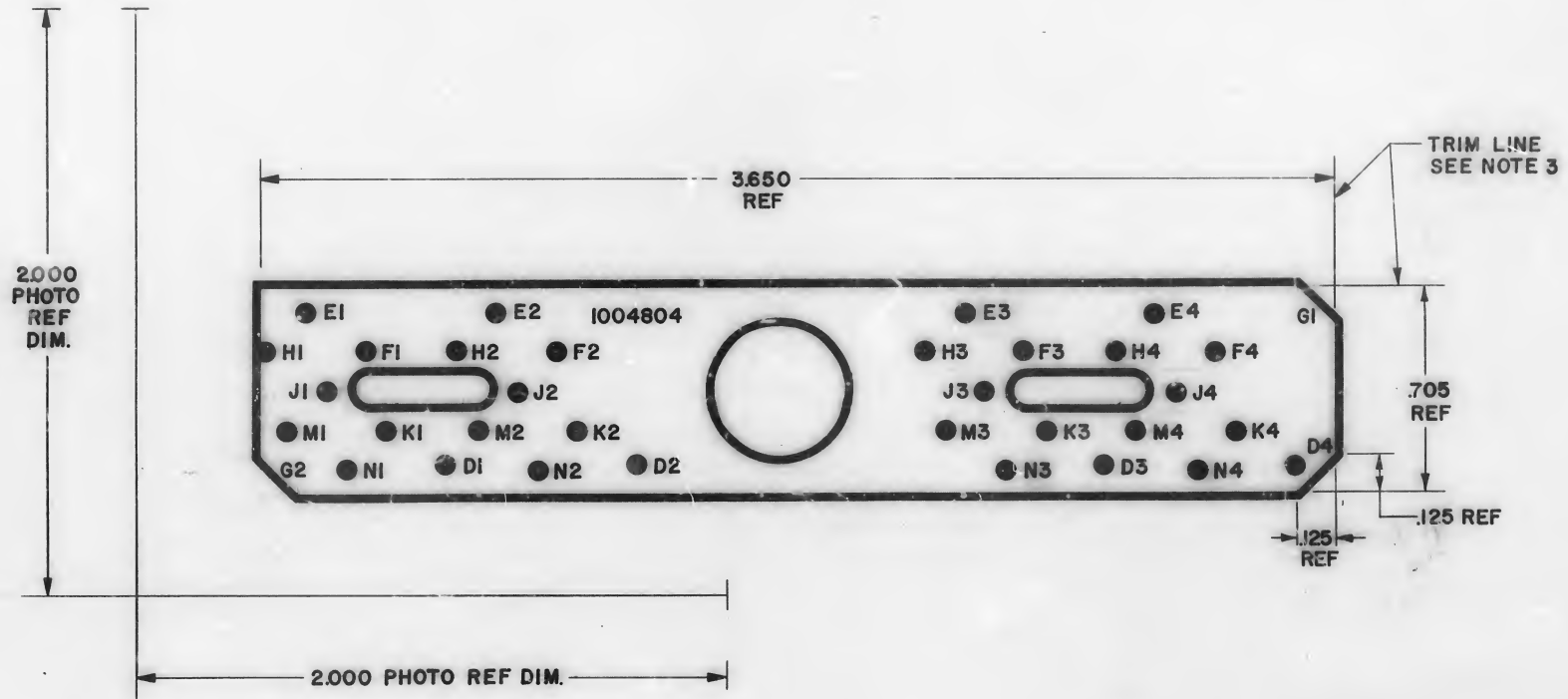
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN P. Bourdieu DATE 2/19/65 CHECKED J. Heger 15 Sept 64 APPROVAL J. Gensman 9/22/64 APPROVAL R. C. Hall 6 Oct 64		BOARD, TERMINAL AGC DSKY MAIN 100 SERIES	
NASA APPROVAL [Signature] MIT APPROVAL [Signature] MIT APPROVAL [Signature]		CODE IDENT NO. SIZE C	NASA DRAWING NO. 1004803
SCALE 1/1		WT	SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±.005	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE 1		
HEAT TREATMENT		
NONE		
FINAL FINISH		
NONE		
APPLICATION		

MASTER

REVISIONS - WHEN REVISIONS ARE REQUIRED, THE DRAWING SHALL BE REVISED BY THE DESIGNER OR HIS AUTHORIZED REPRESENTATIVE. THE REVISIONS SHALL BE INDICATED BY A CIRCLED NUMBER IN THE REVISIONS SECTION. THE REVISIONS SHALL BE MADE IN THE ORIGINAL DRAWING OR IN A SEPARATE REVISION SHEET. THE REVISIONS SHALL BE MADE IN THE ORIGINAL DRAWING OR IN A SEPARATE REVISION SHEET. THE REVISIONS SHALL BE MADE IN THE ORIGINAL DRAWING OR IN A SEPARATE REVISION SHEET.

SYN	DESCRIPTION	DATE	APPROVED



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
  3. CUT TO WITHIN .010 OF TRIM LINE
  4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG. NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	
DO NOT SCALE THIS DRAWING	
MATERIAL	
HEAT TREATMENT	
FINISH	

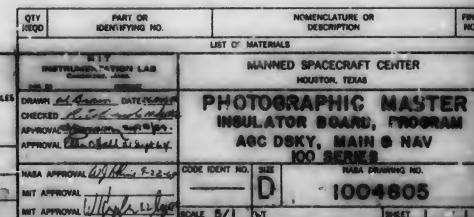
  

DRAWN <i>[Signature]</i> DATE <i>[Date]</i> CHECKED <i>[Signature]</i> APPROVED <i>[Signature]</i> APPROVAL <i>[Signature]</i>	NASA APPROVAL <i>[Signature]</i> NASA APPROVAL <i>[Signature]</i> NASA APPROVAL <i>[Signature]</i>
---	--

MANNED SPACECRAFT CENTER HOUSTON, TEXAS <b>PHOTOGRAPHIC MASTER</b> INSULATOR BD, VERB - NOUN ASC DESK, NAV & MAIN 100 SERIES NASA DRAWING NO. <b>1004804</b>
--

REVISIONS		
DESCRIPTION	DATE	APPROVED





DATE	APPROVED
------	----------

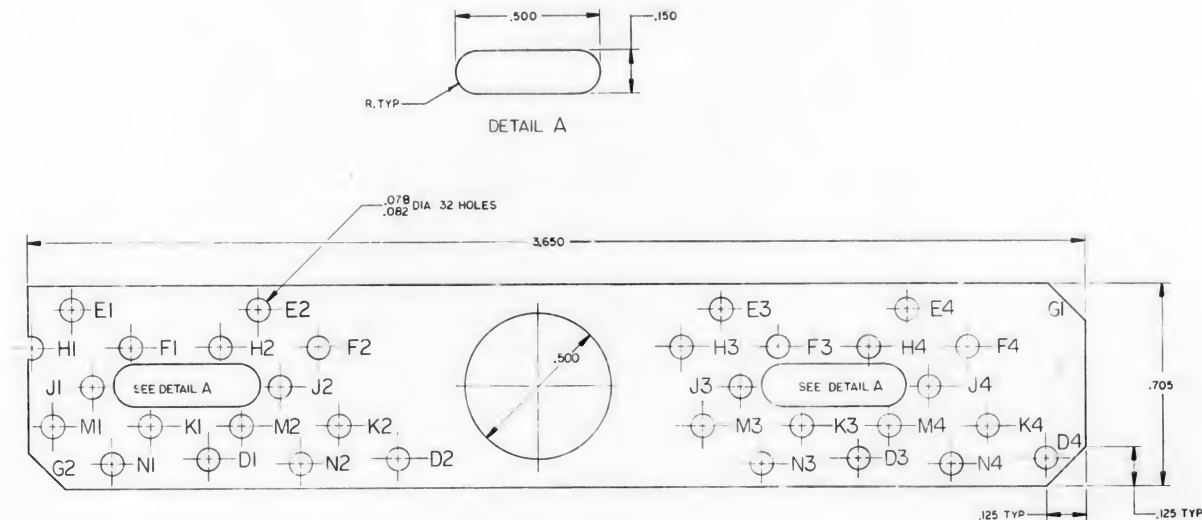
1. INTE PRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-75227
2. THE ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY A PROCESS OR METHOD SHALL INSURE
3. DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 IN. PER FOOT
4. CUT TO WITHIN .010 OF TRIM LINE
5. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN

[illegible]





A		1004812		REVISIONS		12745	
SYM		DESCRIPTION		DATE		APPROVAL	
A		REVISED PER TDRR 13999 DR <i>Parish</i> CHK <i>any</i> <i>3/21</i>		12/1/64		<i>AKC</i>	



REF: DWG NO. 1004804 FOR PHOTOGRAPHIC MASTER

1. MATERIAL: .002/.007 THICK PLASTIC SHEET PER MIL-P-18177, TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. PREPARE BOARD FOR PHOTOGRAPHY PER ND1002133

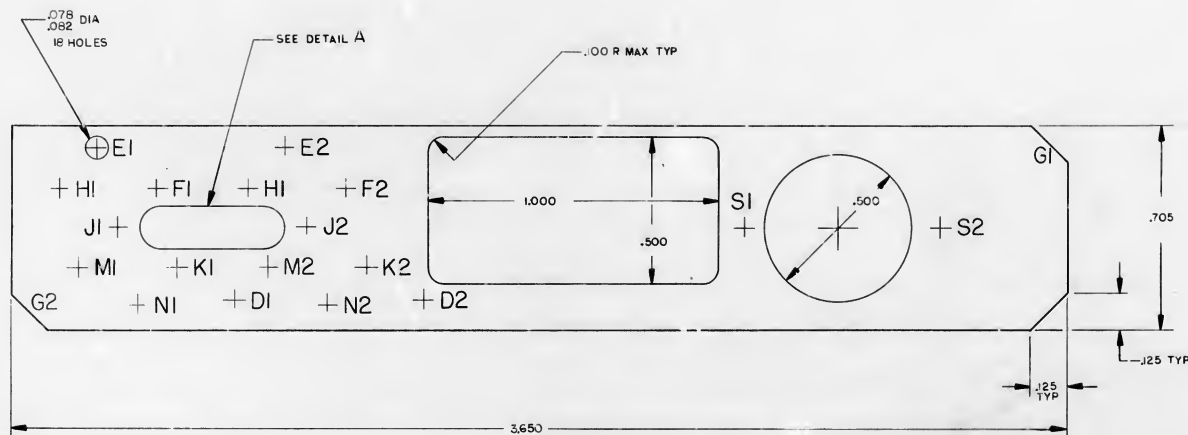
[illegible]

R TYP

.500

.150

DETAIL A



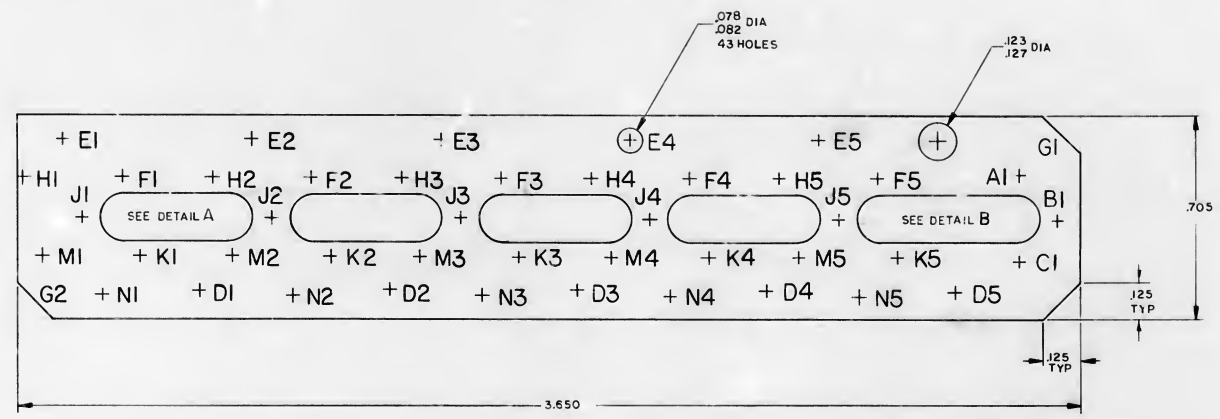
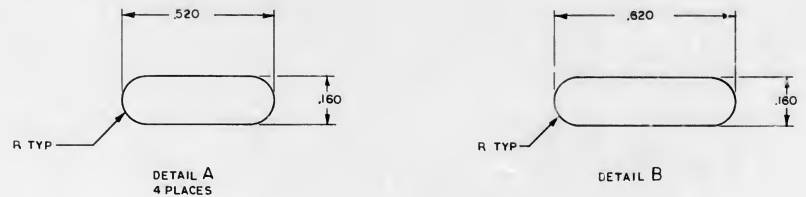
NOTES

1. MATERIAL: .002/.007 THICK PLASTIC SHEET PER MIL-P-18177, TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. PREPARE BOARD FOR PHOTOGRAPHY PER ND1002133

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION	
				LIST OF MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		M.T.Y. INSTRUMENTATION LAB CHAMBER, ROOM		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
FRACTIONS	DECIMALS	ANGLE	DWG. NO.	CONTRACT	
± .020	±	±	DRWING	DATE: 10/26/64	
DO NOT SCALE THIS DRAWING		CHECKED		BY: 10/26/64	
MATERIAL		APPROVAL		DATE: 10/26/64	
SEE NOTE 1		APPROVAL		DATE: 10/26/64	
1003801	HEAT TREATMENT	NASA APPROVAL		CODE IDENT NO.	
NEXT ASSY	NONE	DATE: 10-26-64		SIZE	
APPLICATION	NONE	MIL APPROVAL		D	
		MIL APPROVAL		1004813	
		SCALE: 5/1		SHEET 1 OF 1	

NOTES - THIS DOCUMENT CONTAINS INFORMATION OF VALUE AND THIS PLAN IS THE PROPERTY OF THE U.S. GOVERNMENT AND IS TO BE REPRODUCED AND TRANSMITTED IN ANY FORM AND BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE U.S. GOVERNMENT. THIS DOCUMENT IS NOT TO BE USED FOR THE PROMOTION OF ANY PRODUCT OR SERVICE, OR FOR THE PROMOTION OF ANY PERSON OR ORGANIZATION, OR FOR THE PROMOTION OF ANY POLITICAL OR RELIGIOUS OR RACIAL OR ETHNIC OR SEXUAL OR OTHER INTEREST, OR FOR THE PROMOTION OF ANY OTHER UNLAWFUL OR UNETHICAL ACT. THIS DOCUMENT IS NOT TO BE USED FOR THE PROMOTION OF ANY UNLAWFUL OR UNETHICAL ACT.

1004814		REVISED PER TDR 13999		DATE		APPROVAL	
A		DR 07/20/84		CHK CUL		03/70	



- NOTES
1. MATERIAL: .002/.007 THICK PLASTIC SHEET PER MIL-P-18177, TYPE GEE
  2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  3. PREFARE BOARD FOR PHOTOGRAPHY PER ND1002133

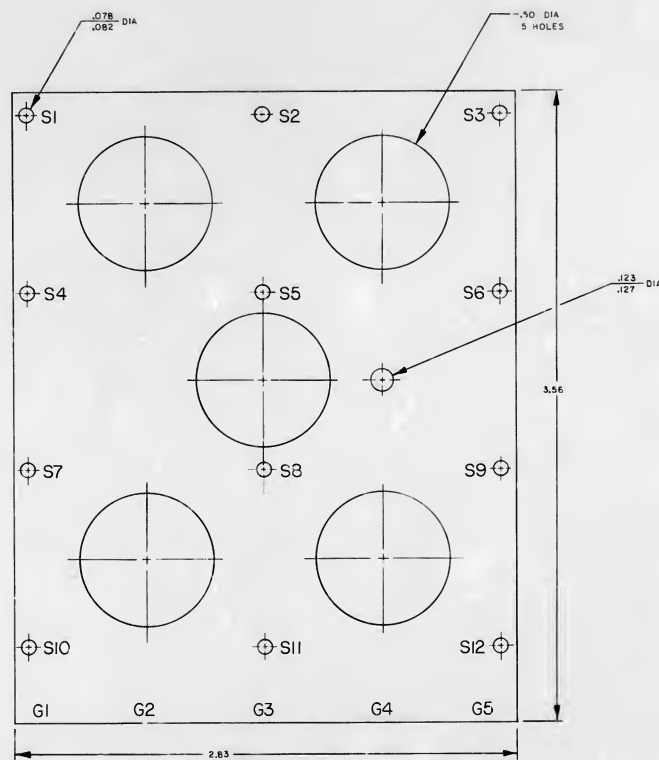
REF:  
DWS NO. 1004804 FOR PHOTOGRAPHIC MASTER

QTY REQ		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
INSTRUMENTATION LAB CAMBRIDGE, MASS				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN BY <i>JD</i> DATE <i>1/28/84</i>				BOARD, INSULATOR REGISTER DISPLAY AGC DSKY, NAV & MAIN 100 SERIES			
CHECKED BY <i>JD</i> DATE <i>2/2/84</i>				NASA DRAWING NO. 1004814			
APPROVAL BY <i>JD</i> DATE <i>2/2/84</i>				SCALE 5/1			
APPROVAL BY <i>JD</i> DATE <i>2/2/84</i>				MT			
APPLICATION				SHEET 1 OF 1			



6  
5  
4  
3  
2  
1

1004815		REVISIONS	
REV	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 13999		
	DR P. 1004815		



REFERENCE  
DWG NO. 1004808 FOR PHOTOGRAPHIC MASTER

- NOTES
1. MATERIAL: .002/.007 THICK PLASTIC SHEET PER MIL-P-18177, TYPE GEE
  2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-O-77-527
  3. PREPARE BOARD FOR PHOTOGRAPHY PER ND1002133

QTY	PART OR IDENTIFYING NO	NONNOMENCLATURE OR DESCRIPTION	FIG NO
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED		MILITARY INSTRUMENTATION LAB	
DIMENSIONS ARE IN INCHES		ELECTRONIC DIV	
FRACTIONS DECIMALS ANGLES		CHECKED BY DATE	
DO NOT SCALE THIS DRAWING		APPROVAL BY DATE	
MATERIAL		APPROVAL BY DATE	
SEE NOTE 1		PASS APPROVAL BY DATE	
HEAT TREATMENT		REWORK BY DATE	
FINISH		REWORK BY DATE	
APPLICATION		REWORK BY DATE	

MANHATTAN SPACECRAFT CENTER HOUSTON, TEXAS	
BOARD, INSULATOR ALARM DISPLAY AGC DSKY, NAV 100 SERIES	
1004800	1004815
SCALE 1/1	SCALE 1/1
1	1

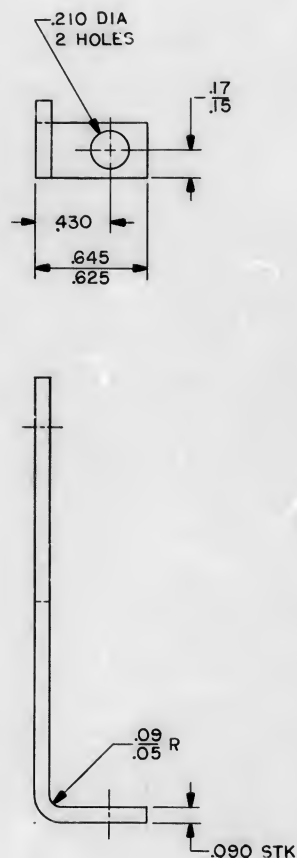
R/VISIONS 1322				
SYM	DESCRIPTION	DATE	A REASON	



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIBER NO.	
				LIST OF MATERIALS			
M17 INSTRUMENTATION LAB CHAMBER, MAIN SER. NO. _____ INSTANT				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS    DECIMALS    ANGLES = .020       =		DRAWN <i>W. J. G. 10/20/60</i> DATE <i>10/20/60</i> CHECKED <i>W. J. G. 10/20/60</i> APPROVAL <i>W. J. G. 10/20/60</i> APPROVAL <i>W. J. G. 10/20/60</i>		BOARD, INSULATOR INDICATOR DISPLAY AGC DSKY, INAIN 100 SERIES			
DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 1		NASA APPROVAL <i>W. J. G. 10/20/60</i>		CODE IDENT NO. <i>D</i> SIZE		NASA DRAWING NO. <i>1004816</i>	
HEAT TREATMENT NONE		MIT APPROVAL <i>W. J. G. 10/20/60</i>		SCALE <i>5/1</i>		SHEET 1 OF 1	
NEXT ASSY USED ON		FINAL FINISH NONE					
APPLICATION							

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND NO OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY ADOPTED THIS DRAWING, SPECIFICATION, OR OTHER DATA IS NOT TO BE REGARDED BY APPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE UNLESS OR ANY OTHER FORM OF COMMUNICATION, OR CONVEYING ANY RIGHTS OR PRIVILEGES TO MANUFACTURE, USE, OR SELL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



# NOTES

1. MATL: AL. 5052-H32 PER QQ-A-250/8
2. REMOVE BURRS AND SHARP EDGES
3. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARD PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS      DECIMALS      ANGLES $\pm .005$ $\pm 3^\circ$ DO NOT SCALE THIS DRAWING
1003809		MATERIAL  SEE NOTE 1
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	R. Boudreau	21 Nov 64	BRACKET, E/L FRAME AGC USKY MAIN 100 SERIES	
CHECKED	W. J. Hall	22 Nov 64		
APPROVED	W. J. Hall	22 Nov 64		
APPROVED	W. J. Hall	22 Nov 64		
APPROVED MIT	W. J. Hall	22 Nov 64	CODE IDENT NO. SIZE C	DRAWING NO. 1004817
APPROVED MSC	W. J. Hall	22 Nov 64	DATE SCALE 2/1	SHEET 1 OF 1

1004817

REVISIONS

13222

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



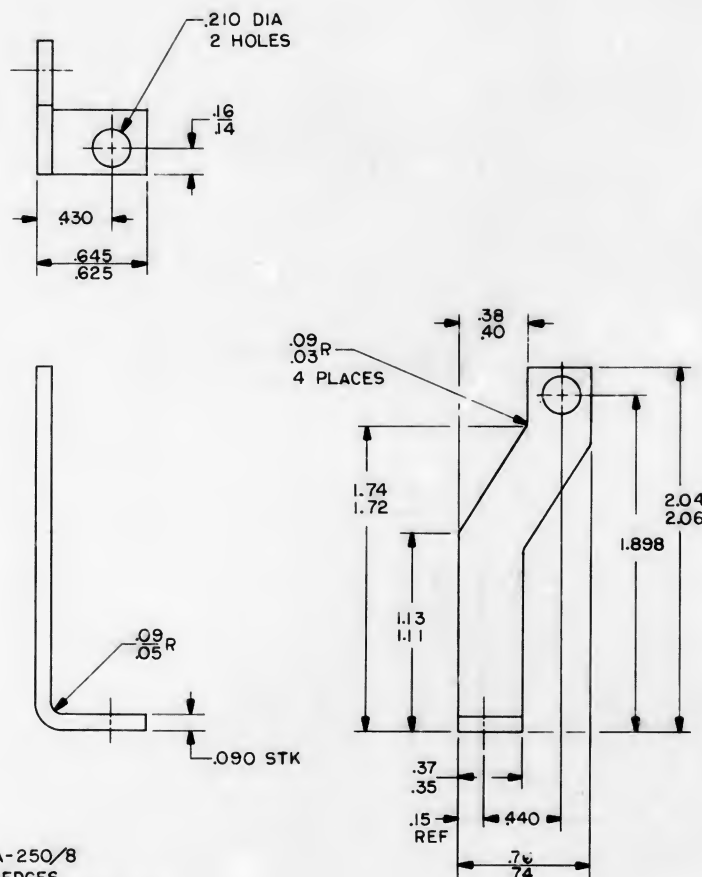
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELAY OR INADEQUACY, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, PERMITTED, OR IN ANY WAY SUPPLIED THE BASIC DRAWING, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE, AS IN ANY MANNER, LICENSE, OR OTHER RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

1004818 A

REVISIONS

13222

BY	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 20558			10/1/64	P. D. L.



# NOTES

1. MATL: AL. 5052-H32 PER QQ-A-250/8
2. REMOVE ALL BURRS AND SHARP EDGES
3. ANODIZE PER MIL-A-8625 TYPE I (CHROMIC ACID) DYED BLACK
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

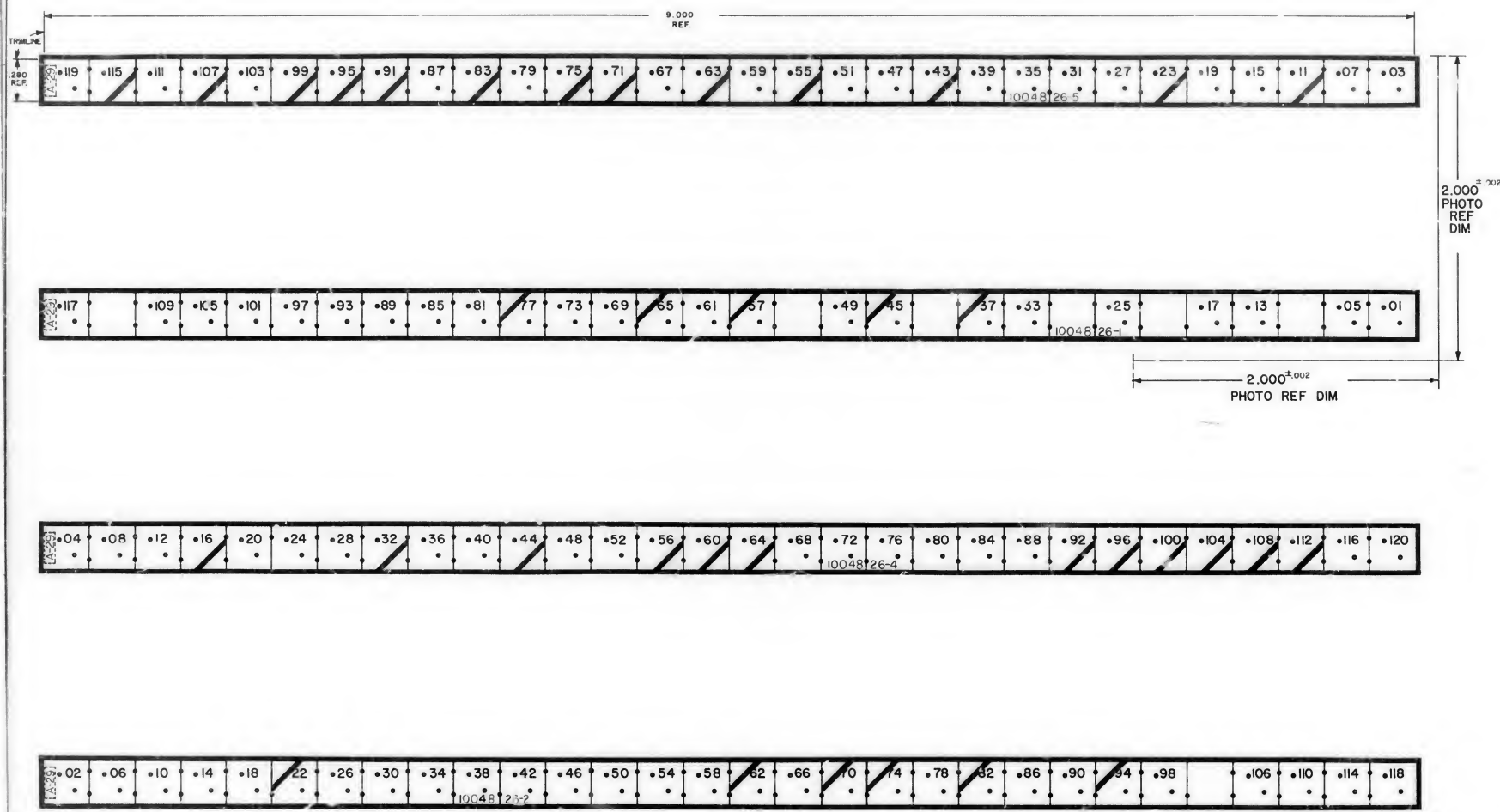
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ $\pm$ .005 $\pm$ DO NOT SCALE THIS DRAWING MATERIAL
1003809		SEE NOTE 1
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	P. Bourdieu	22 Nov 64	BRACKET, CONNECTOR PLATE AGC DSKY MAIN 100 SERIES	
CHECKED	W. J. ...	10 Nov 64		
APPROVED	W. J. ...	10 Nov 64		
APPROVED	W. J. ...	10 Nov 64		
APPROVED MIT	W. J. ...	10 Nov 64	CODE IDENT NO. 80230	SHEET 1 OF 1
APPROVED MSC	W. J. ...	10 Nov 64	SCALE 2/1	

DRAWING NO.

1004818

SEE NOTE 1		4 M5240R-C0415 INSERT, MEDICAL 5 M5240R-C0B15 INSERT, MEDICAL 1004819 C01 HOUSING PART OF IDENTIFYING NO.		UNIT OF MEASURE NONCUMULATIVE OR DESCRIPTION YES NO	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ON DIMENSIONS SEE NOTE 1 DO NOT SCALE THIS DRAWING MATERIALS SEE NOTE 1		BUY INSTRUMENTATION LAB 1004819 QUANTITY 1 DATE 10/18/68 APPROVED BY <i>[Signature]</i> APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>		MANHATTAN "MACHOTART" CENTER HOUSTON, TEXAS HOUSING, MACHINED POWER SUPPLY AGC DSKY MAIN & NAV LOG SERIES	
1004819	LAST TREATMENT	HEAD APPROVAL	GOOD	DATE	10/18/68
NEXT DATE	USED ON	MT APPROVAL	DATE	12/20/68	
APPLICATION	FINAL CHECK	MT APPROVAL	DATE	12/20/68	
SEE NOTE 3		HEAD CHECKING NO. 1004819		UNIT INCHES 1/16 1/32 1/64 1/8 1/4 1/2 3/4 1 1 1/2 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437	



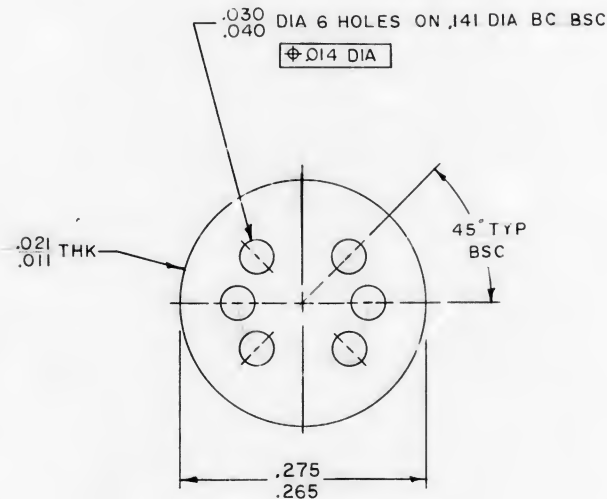
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH.
  3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN.
  4. CUT TO WITHIN .001 OF TRIMLINE.
  5. MATERIAL: .006/.008 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-7-340, TYPE 19, CLASS 2, STYLE 1A.
  6. PUNCH HOLES TO .040 DIAMETER.

REFERENCE DWG.  
LWIRING DIAGRAM 1005761

1005814 1005815		SEE NOTE 5		INSTRUMENTATION LAB MANNED SPACECRAFT CENTER QUANTICO, VA	
1005814 1005815		SEE NOTE 5		IDENTIFICATION TAPE LOGIC MODULE NO. A-29	
1005814 1005815		SEE NOTE 5		E 1004826	



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



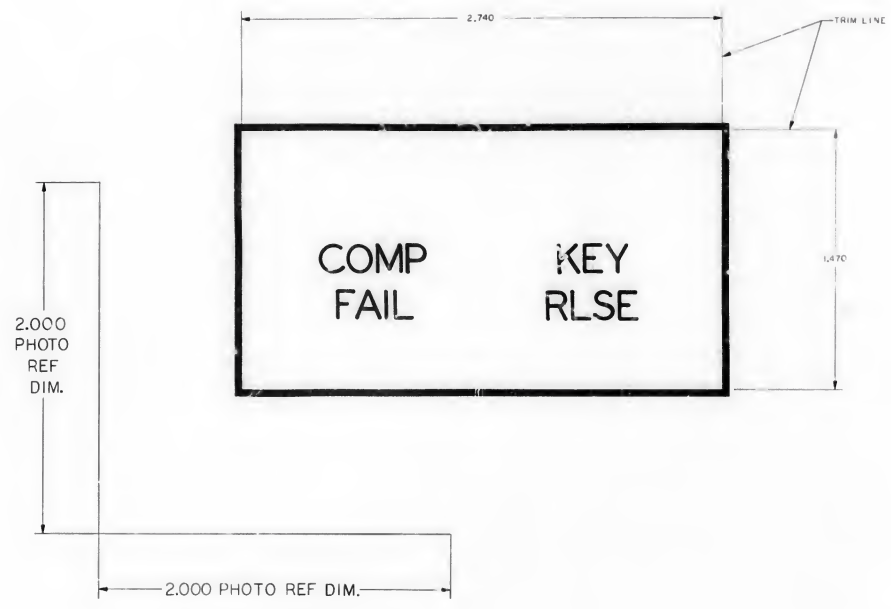
# NOTES

1. MATL: MAKE FROM 1006806-19
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING
1003814		MATERIAL  SEE NOTE 1
1003813		
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	W. J. Cullen	MAPR65	INSULATOR	
CHECKED	W. J. Cullen	4/2/65		
APPROVED	W. J. Cullen	2/2/65		
APPROVED	W. J. Cullen	2/2/65		
APPROVED MIT	W. J. Cullen	2/2/65	CODE IDENT NO. 80230	SIZE C
APPROVED MSC	W. J. Cullen	4/2/65	DATE	DRAWING NO. 1004851
			SCALE 10/1	SHEET 1 OF 1

1004857

REVISIONS  
DATE 11 APPROVAL

## NOTES

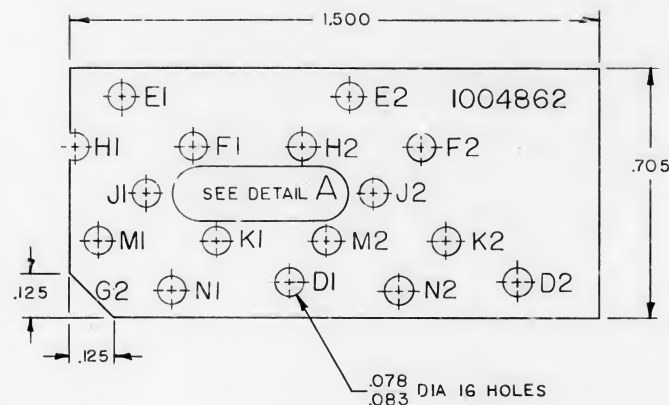
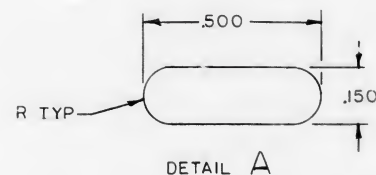
1. MATERIAL: FILM, 006/008 THK SENSITIZED DIMENSIONALLY STABLE PER L-P-340, TYPE 1B, CLASS 2, STYLE 1A
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY ANY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIMLINE
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL- D-70327
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN

QTY REQD	PART OR IDENTIFYING NO	NAME NO. / TITLE OR DESCRIPTION	TIME NO.
INSTRUMENTATION LAB HOUSTON TEXAS		LIST OF MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS - DECIMALS ANGLES CHECKED APPROVAL MATERIAL DO NOT SCALE THIS DRAWING SEE NOTE 1		MANNED SPACECRAFT CENTER HOUSTON TEXAS INSULATOR, FRONT INDICATOR DISPLAY AGC DSKY, MAIN 100 SERIES RASA DRAWING NO 1004857	
1003801	NONE	USA APPROVAL	CODE IDENT NO E
NEAT COPY	USED ON	FINAL CHECK	SCALE 1/1
APPLICATION	NONE	NOT APPROVAL	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND NO OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS 20557

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-----	------	-------------	----	-----	------	----------



# NOTES

1. MATL: .002/.007 THICK PLASTIC SHEET  
PER MIL-P-18177, TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH  
STANDARDS PRESCRIBED BY MIL-D-70327
3. PREPARE BOARD FOR PHOTOGRAPHY PER ND1002133

REF.

DWG NO. 1004861-001 FOR PHOTOGRAPHIC MASTER

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

QTY REQ'D	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION		FIND NO.
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	<i>R. J. Smith</i>	10APR65	BOARD INSULATOR L.H. VERB-NOUN DISPLAY AGC DSKY NAV & MAIN 100 SERIES		
CHECKED	<i>W. J. Smith</i>	10APR65			
APPROVED					
APPROVED	<i>Edw. C. Hall</i>	10APR65			
APPROVED MIT			CODE IDENT NO.	SIZE	DRAWING NO.
			80230	C	1004862
APPROVED MSC			DATE	SCALE 4/1	SHEET 1 OF 1



4

3

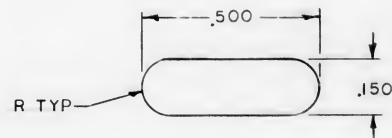
2

1

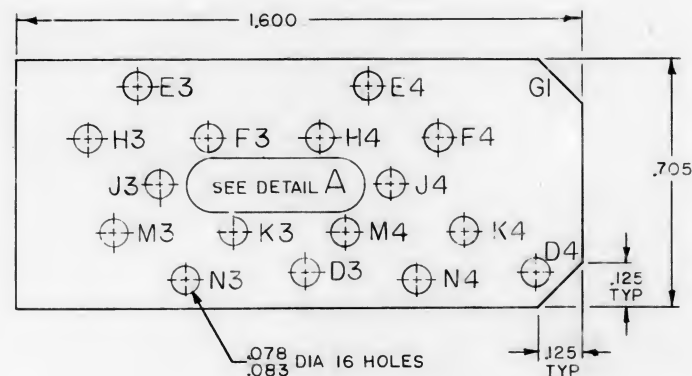
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSION, MISSTATEMENT, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWING, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER ENDORSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS 20557

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



DETAIL A



REF.

DWG NO. 1004861-002 FOR PHOTOGRAPHIC MASTER

## NOTES

1. MATL: .002/.007 THICK PLASTIC SHEET PER MIL-P-18177, TYPE GEE
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. PREPARE BOARD FOR PHOTOGRAPHY PER NDI002133

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS    DECIMALS    ANGLES ±                ±                ± DO NOT SCALE THIS DRAWING
		MATERIAL
1003802		SEE NOTE 1
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>R. J. [Signature]</i>	9 APR 65	BOARD INSULATOR R.H.		
CHECKED <i>E. [Signature]</i>	10 APR 65	VERB-NOUN DISPLAY		
APPROVED <i>E. [Signature]</i>		AGC DSKY NAV & MAIN 100 SERIES		
APPROVED MIT		CODE IDENT NO. 80230	SIZE C	DRAWING NO. 1004863
APPROVED MSC		DATE	SCALE 4/1	SHEET 1 OF 1

4

3

2

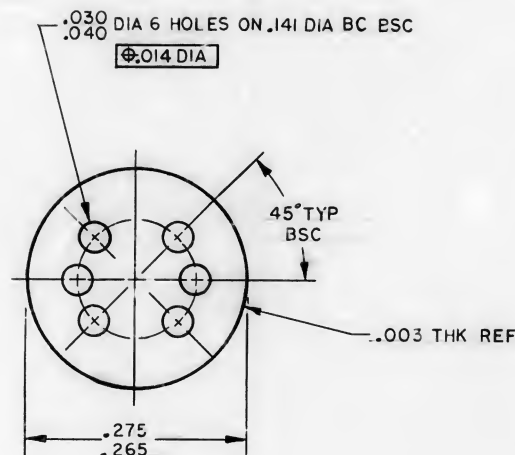
1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY LIABILITY WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN OR OTHER DELIVERING THE HIGHER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS

21583

SYN	DATE	DESCRIPTION	FOR	OWN	DATE	APPROVED



## NOTES

1. MATL: MAKE FROM 1006352
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>[Signature]</i> 25 AUG 65		INSULATOR		
CHECKED <i>[Signature]</i> 25 AUG 65				
APPROVED <i>[Signature]</i> 25 AUG 65				
APPROVED <i>[Signature]</i> 25 AUG 65				
APPROVED <i>[Signature]</i> 25 AUG 65		CODE IDENT NO.	SIZE	DRAWING NO.
MIT NOT REQUIRED PER LETTER 80230 C 1004865				
NASA PP7-65-612		DATE	SCALE 10/1	SHEET 1 OF 1

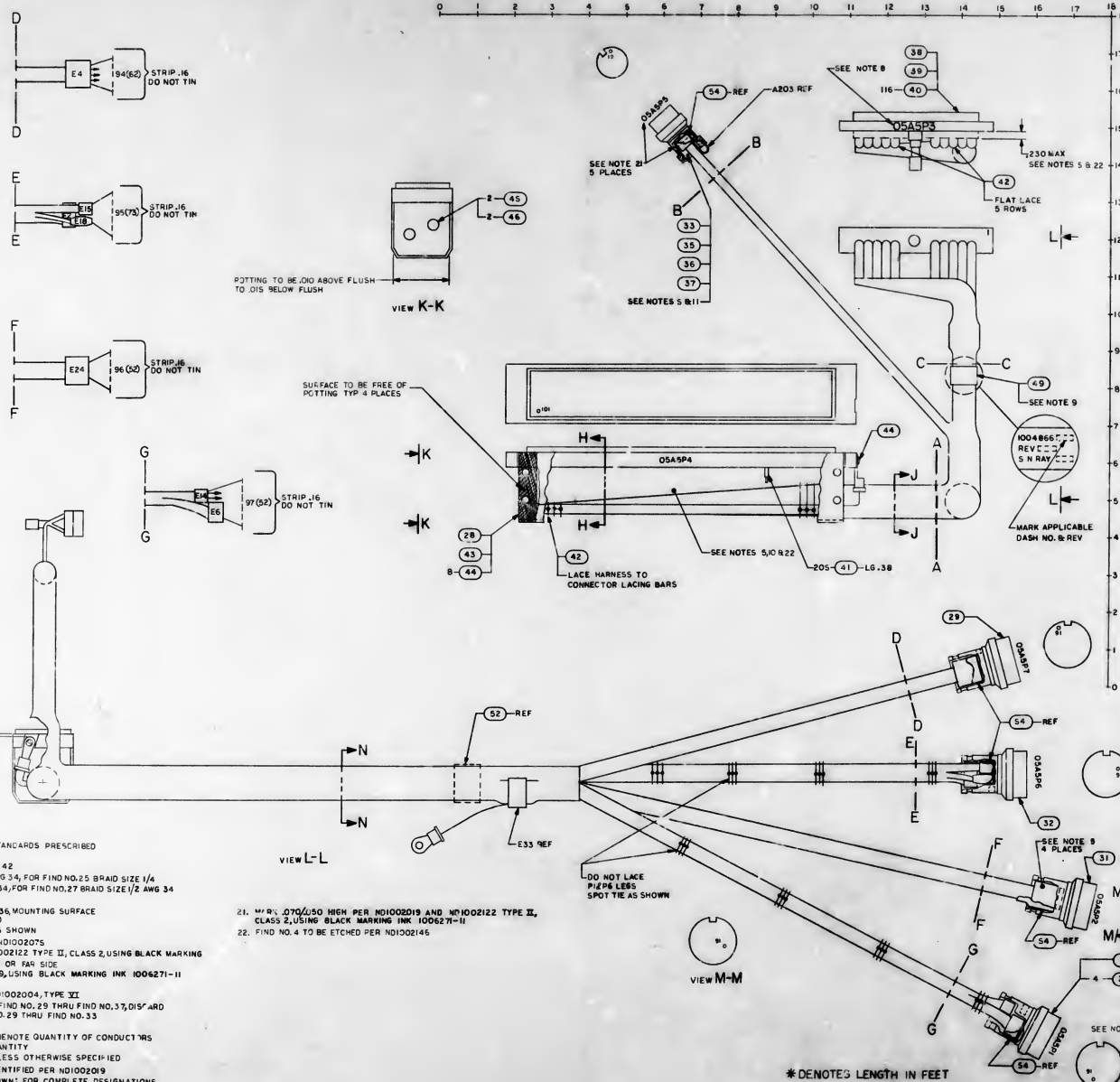
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING	
MATERIAL	
SEE NOTE 1	
1003814	
1003813	
NEXT ASSY	USED ON
APPLICATION	

4

3

2

1



- NOTES
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70227
  - FABRICATE PER NID002032 EXCEPT USE FIND 42
  - 2.0-8-576 FOR FIND NO.24 BRAID SIZE 1/4 AWG 34, FOR FIND NO.25 BRAID SIZE 1/4 AWG 36, FOR FIND NO.26 BRAID SIZE 3/8 AWG 34, FOR FIND NO.27 BRAID SIZE 1/2 AWG 34
  - CRIMP PER NID002026
  - ENCAPSULATE INDICATED AREA PER NID002236 MOUNTING SURFACE OF CONNECTOR MUST NOT BE ENCAPSULATED
  - CUT SOLDERING AND SLEEVING LENGTHS AS SHOWN
  - SOLDER PER NID002071 USING SOLDER PER NID002075
  - MARK .200/.50 HIGH PER NID002019 AND NID002122 TYPE II, CLASS 2, USING BLACK MARKING INK 1006271-II CENTRALIZE AS SHOWN NEAR OR FAR SIDE
  - MARK .02/.060 HIGH GOTHIC PER NID002019, USING BLACK MARKING INK 1006271-II AND SERIALIZE PER NID002023
  - EAL TERMINALS TO CONNECTOR PER PER NID002004, TYPE VI
  - APPLY .50/.48 TO MATING THREADS OF FIND NO.29 THRU FIND NO.33, DISCARD THREADED ADAPTER SUPPLIED WITH FIND NO.29 THRU FIND NO.33
  - AR DEVOTES AS REQUIRED
  - NUMBERS ENCLOSED WITHIN PARENTHESES DENOTE QUANTITY OF CONDUCTORS
  - NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
  - LACE ENTIRE HARNESS CONFIGURATION UNLESS OTHERWISE SPECIFIED
  - \* FIND NO.52 IS TO BE SUPPLIED AND IDENTIFIED PER NID002019
  - PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS PREFIX P NUMBERS IN RUN CHART WITH 05A5
  - TAKE ENTIRE BRADED CONFIGURATION USING FIND 54
  - MIL-T-23594, TYPE I, WIDTH 1/2
  - MIL-T-631, TYPE F, FORM U, GRADE A, CLASS I, CATEGORY I, AWG SIZE NO.3

21. MARK .070/.50 HIGH PER NID002019 AND NID002122 TYPE II, CLASS 2, USING BLACK MARKING INK 1006271-II
22. FIND NO.4 TO BE ETCHED PER NID002146

\* DENOTES LENGTH IN FEET

QTY	DESCRIPTION	QTY	DESCRIPTION
2	1000243-36	1	FERRULE, ELEC
0.2	SEE NOTE 20	1	INSULATION, ELEC
AN	SEE NOTE 18	1	TAPE, PRESSURE SENSITIVE
3	1000242-36	1	FERRULE, ELEC
1	1010400-5	1	CLAMP, CABLE
1	MS25036-12	1	TERM'NAL, LUG
1	MS25036-11	1	TERMINAL, LUG
1	MR18024-42	1	STRAP, CABLE
1	MIL-5-2273 GRADE C	1	SEALING COMPOUND
1	1003565-011	1	TERMINAL BLT'CK ASSY
2	MS35333-70	1	WASHER, LOCK
2	1006783-19	1	SCREW, BUTTON HD
9	1006783-18	1	SCREW, BUTTON HD
1	1004866	1	COVER
AR	1002507-003	1	TAPE, LACING
7.7	1006322-007	1	INSULATION, SLEEVING
244	1010738-5	1	CONTACT, ELEC, PIN
1	1010812-1	1	SEAL RUBBER
1	1010815-144	1	CONNECTOR, PLUG
1	MS16095-2	1	SCREW, CAP
1	1004781-002	1	CLAMP, CONNECTOR
1	1004782-002	1	ADAPTER, CONNECTOR
4	1004782-001	1	ADAPTER, CONNECTOR
1	1010771-013	1	CONNECTOR, PLUG
1	1010771-104	1	CONNECTOR, PLUG
1	1010771-103	1	CONNECTOR, PLUG
1	1010771-102	1	CONNECTOR, PLUG
1	1010771-101	1	CONNECTOR, PLUG
1	1003731-011	1	CONNECTOR ASSY
0.8	SEE NOTE 3	1	WIRE, BRAID
0.7	SEE NOTE 3	1	WIRE, BRAID
2.8	SEE NOTE 3	1	WIRE, BRAID
2.6	SEE NOTE 3	1	WIRE, BRAID
2	1010402-3	1	SLEEVE, SOLDER
14	1010402-2	1	SLEEVE, SOLDER
1	1006344-001	1	FERRULE, ELEC
1	1000242-29	1	FERRULE, ELEC
5	1000242-27	1	FERRULE, ELEC
1	1000242-32	1	FERRULE, ELEC
6	1000242-33	1	FERRULE, ELEC
1	1000242-30	1	FERRULE, ELEC
2	1000243-40	1	FERRULE, ELEC
8	1000243-21	1	FERRULE, ELEC
4	1000243-37	1	FERRULE, ELEC
2	1000243-34	1	FERRULE, ELEC
1	1000243-31	1	FERRULE, ELEC
100	1010789-008	1	WIRE, ELEC, AWG 24 (VEL)
25.0	1010789-008	1	WIRE, ELEC, AWG 24 (2 COND TWIST)
17.0	1010789-015	1	WIRE, ELEC, AWG 26 (2 COND BLD)
28.0	1010789-004	1	WIRE, ELEC, AWG 24 (3 COND TWIST)
4.0	1010789-005	1	WIRE, ELEC, AWG 24 (4 COND TWIST)
15.0	1010789-006	1	WIRE, ELEC, AWG 22 (VEL)
16.0	1010416-140	1	WIRE, ELEC, AWG 26 (2 COND ORN TCR)
16.0	1010789-007	1	WIRE, ELEC, AWG 22 (BLK)
216	1010789-017	1	WIRE, ELEC, AWG 26 (2 COND T.Y.S.T)
8.0	1010789-018	1	WIRE, ELEC, AWG 26 (VEL)

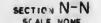
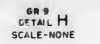
UNLESS OTHERWISE SPECIFIED  
CONDUCTORS ARE 48 HOURS  
TOLERANCE ON  
FRACTIONS ON  
DECIMALS  
APPROVAL: [Signature]

WIRING HARNESS  
AGC TO PSA R/G/N TO SPACECRAFT

80230 J 1004866

1004866 A








MANNED SPACECRAFT CENTER			
HOUSTON, TEXAS			
WIRING HARNESS			
AGC TO PSA & G/N TO SPACECRAFT			
COOK BENT NO	REV	NASA DRAWING NO	
80230	J	1004865	
DATE 1/1	BY	SHEET 2 OF 8	

ASSEMBLY INFORMATION CHART												
REMARKS	FROM		DESCRIPTION					TO		REMARKS		
	COND	IDEN	STA	NO	DES	COLOR	AWG	FIND NO	STA		NO	DES
A1			13	PA-146		RED	24		95	PA-26		GROUP 1 SEE DETAIL A
			14	PA-147		RED	24	7	95	PA-47		
			15	PA-148		GRN	24		95	PA-48		
				E17	SHLD					E18		
A2			7	PA-540		YEL	26		95	PA-74		GROUP 2 SEE DETAIL A
			8	PA-541		RED						
			3	436		YEL					89	
			4	437		RED					88	
A3			3	336		YEL					60	
			4	337		RED					59	
A4			1	434		YEL					37	
			2	435		RED					36	
A5			1	334		YEL					20	
			2	335		RED					19	
A6			5	138		YEL					18	
			6	139		RED					17	
A7			1	234		YEL					21	
			2	235		RED					8	
A8			1	134		YEL					22	
			2	135		RED					9	
A9			3	236		YEL					42	
			4	237		RED					23	
A10			3	136		YEL					43	
			4	137		RED					69	
A11			5	238		YEL					35	
			6	239		RED					34	
A12			13	346		YEL					7	
			14	347		RED					6	
A13			13	246		YEL					2	
			14	247		RED					1	
A14			5	439		YEL					10	
			6	439		RED					2	
A15			5	338		YEL					24	
			6	339		RED					11	
A16			7	440		YEL					56	
			8	441		RED					55	
A17			7	340		YEL					33	
			8	341		RED					32	
A18			7	240		YEL					16	
			8	241		RED					15	
A19			7	140		YEL					5	
			8	141		RED					44	
A20			13	446		YEL					25	
			14	447		RED					4	
A21			9	442		YEL					13	
			10	443		RED					12	
A22			9	342		YEL					27	
			10	343		RED					54	
A23			9	242		YEL					53	
			10	243		RED					31	
A24			9	142		YEL					52	
			10	143		RED					30	
A25			11	444		YEL					51	
			12	445		RED					29	
A26			11	344		YEL					50	
			12	345		RED					28	
A27			11	244		YEL					46	
			12	245		RED					47	
A28			11	144		YEL					73	
			12	145		RED					58	
A29			16	149		YEL					57	GROUP 2
			17	PA-150		RED	26	2	95	PA-57	E2	
A30				E1	SHLD							
A31			26	PA-424		YEL	26		94	PA-7-81		PART OF GROUP 3 SEE DETAIL B
			27	PA-425		RED					60	
A32			26	324		YEL					39	
			27	325		RED					37	
A33			24	422		YEL					58	
			25	423		RED					36	
A34			24	322		YEL					35	
			25	323		RED					39	
A35			8	416		YEL					20	
			19	417		RED					40	
A36			19	316		YEL					21	
			18	317		RED					41	
A37			19	217		YEL					23	PART OF GROUP 3 SEE DETAIL C
			18	216		RED					67	
A38			19	PA-117		RED	26	2	94	PA-7-82		SEE DETAIL C

ASSEMBLY INFORMATION CHART													
REMARKS	FROM			DESCRIPTION						TO			REMARKS
	COND	IDEN	STA NO	DES	COLOR	AWG	FIND	NO	STA NO	DES			
	A39		21	P4-418	YEL	26		2		94	P7-19		PART OF GROUP 3 SEE DETAIL B
			20	318	RED								
	A40		21	318	RED								
			24	122	YEL							70	
	A41		25	123	RED							71	
			20	218	YEL							9	
	A42		21	219	RED							2	
			20	118	YEL							23	
	A43		21	119	RED							40	
			22	420	YEL							43	
	A44		23	421	RED							24	
			22	320	YEL							69	
			23	321	RED							44	
	A45		22	220	YEL							57	
			23	231	RED							56	
	A46		22	120	YEL							34	
			23	121	RED							33	
	A47		26	224	YEL							45	
			27	225	RED							25	
	A48		26	124	YEL							25	
			27	125	RED							65	
	A49		24	222	YEL							17	
			25	223	RED			2				16	
	A50		29	228	YEL							P7-11	
			28	227								1	
	A52		28	327								6	
			28	127								3	
	A54		29	328								84	
			30	329								55	
	A56		31	330								32	
			32	331								16	
	A58		30	229								83	
			31	230								54	
	A60		32	231								31	
			30	129								5	
	A62		31	130								14	
			32	131								20	
	A64		33	332								4	
			33	232								13	
	A66		33	132								29	
			34	133								12	
	A68		29	P4-128	YEL	26		1		94	P7-26		
				E3	SHLD						E4		
	A70			E4	BLK	22		3		94	P7-51		
				E4	BLK	22		3		94	P7-67		
	A71			E4	BLK	22		3		94	P7-67		
				E4	BLK	22		3		94	P7-64		
	A72												

ASSEMBLY INFORMATION CHART													
REMARKS	FROM			DESCRIPTION				TO			REMARKS		
	COND	IDEN	STA NO	DES	COLOR	AWG	FIND	NO	STA NO	DES			
	A108	54	PA-618	RED	26		2	87	PA-194	87	PA-195	GROUP 5 SEE DETAIL D	
	A109	65	534	RED				88	90				
	A110	66	535	RED				89	91				
	A111	59	621	RED					123				
	A111	59	520	YEL				88	125				
	A111	60	521	RED				87	126				
	A112	67	644	YEL				89	224				
	A112	68	645	RED				88	226				
	A113	65	634	YEL				87	94				
	A113	66	635	RED				87	95				
	A114	55	616	YEL				88	190				
	A114	56	617	RED				89	191				
	A115	55	516	YEL				89	192				
	A115	56	517	RED				88	193				
	A116	63	430	YEL				89	88				
	A116	61	526	RED					54				
	A117	64	631	YEL					85				
	A117	61	626	RED			2						
	A118	61	426	YEL			1		55				
	A119	64	531						119				
	A120	62	428						87				
	A121	62	628					89	120				
	A122	53	114					91	47				
	A123	54	115					90	48				
	A124	53	214					91	115				
	A125	48	504					90	116				
	A126	53	614					91	8				
	A127		514						216				
	A128		414						181				
	A129	53	314						146				
	A130	52	413						146				
	A131		313						113				
	A132		213						80				
	A133	52	113					91	P3-45				
	A134	47	603						E 8				
	A135	47	PA-903						E 9				
	A136		E 8					93	P3-75				
	A137		E 9						3				
	A138		E 9						209				
	A139		E 9					93	141				
	A140	52	PA-513					91	179				
	A141	49	310					93	210				
	A142	49	210						175				
	A143	50	611						142				
	A144		511						109				
	A145		411						76				
	A146		311						41				
	A147		211					93	4				
	A148	50	111					92	212				
	A149	51	612						177				
	A150		512						144				
	A151		412						111				
	A152		312						78				
	A153		212						43				
	A154	51	112					92	6				
	A155	52	613					91	214				
	A156	54	PA-613			26	1	51	82				
	A157	46	R1				24	10	28	122			
	A158	46	R2				24	10	89	152			
	A159	45	R3	YEL			24	10	89	P3-153			
	A160		E7	SHLD					E10			GROUP 5	
	A160		E10	BLK			23	3	P3-107			SEE DETAIL D	
	A161		E10	BLK			22	3	89	P3-89			
	A162	71	PA-607	YEL		26	1	90	P3-49			GROUP 6	
	A163	71	507					89	51			SEE DETAIL E	
	A164	70	305					90	117				
	A165	70	205					90	84				
	A165	71	305					89	220				
	A167	70	605					50	218				
	A168	70	507						83				
	A169	70	405	YEL					157				
	A170	69	634	RED/GRN			4		151				
	A171	72	609						118				
	A172	73	415					90	85				
	A173	73	215					89	22				
	A174	71	407					89	185				
	A175	73	415					89	186				
	A176	72	208					90	219				
	A177	74	333				2		184				
	A178	74	PA-433	RED/GRN			2	90	P3-90			GROUP 6	
	A179		E12	SHLD				E11				SEE DETAIL F	
	A179		E11	BLK			22	3	89	P3-187			

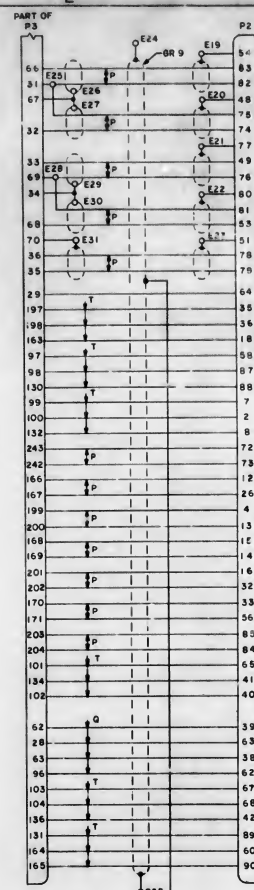
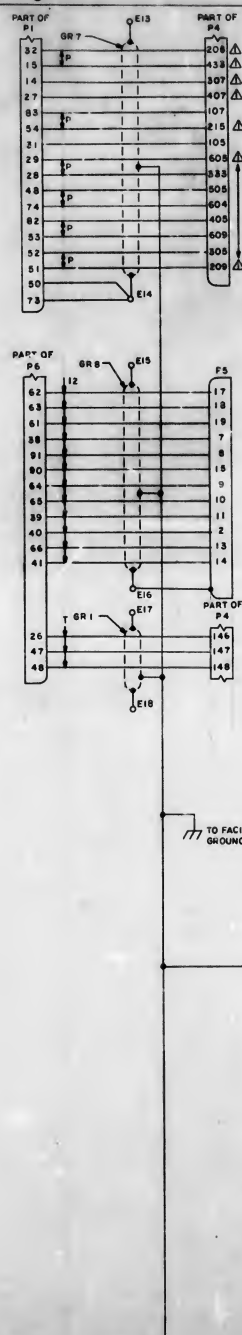
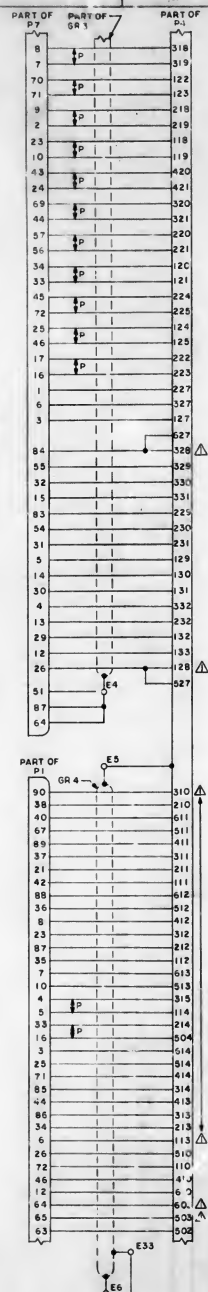


 DENOTES TWO CONNECTIONS TO ONE PIN  
 DENOTES JUMPER  
 DENOTES INTERNAL CONNECTION

PART OF  
GRCUP 9  
SEE DETAIL H

QTY PRD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FAB NO	
				LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DIMENSIONS FRACTIONS DECIMALS ANGLES INCHES $\frac{1}{16}$ $\frac{1}{32}$ $\frac{1}{64}$ $\frac{1}{8}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $1$ DO NOT SCALE THIS DRAWING MATERIAL				M T Y H T INTERNATIONAL LAB CHECKED <i>John J. Harwood</i> 100606 APPROVED <i>John J. Harwood</i> APPROVAL <i>John J. Harwood</i>		MANHED SPACECRAFT CENTER HOUSTON, TEXAS  WIRING HARNESS AGC TO PSA & PN TO SPACEFAC	
PART TREATMENT  HEAT TREAT  HEAT TREAT APPLICATION REPAIR				TISSA APPROVAL <i>A. C. MULLER</i> SET UP APPROVAL T.Y. APPROVAL		CODE IDENT NO SUB 80230 J SCALE NUMBER 1004866	
DATE TIME DRAWN BY CHECKED BY APPROVED BY TISSA APPROVAL SET UP APPROVAL T.Y. APPROVAL				DATE TIME DRAWN BY CHECKED BY APPROVED BY TISSA APPROVAL SET UP APPROVAL T.Y. APPROVAL			

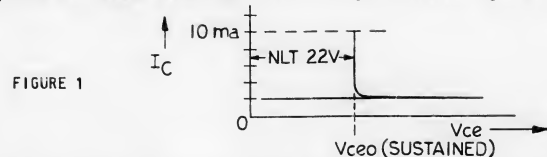




CITY		PART OF IDENTIFYING NO.		NAME: YOUR OR DESCRIPTION		PAGE NO.	
STREET				LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFY DIMENSIONS ARE IN INCHES TOLERANCES OF FRACTIONS DECIMALS ANGLES				CITY SUBSTANTIATION LAB NAME: <i>James Earl Ray</i> DATE: <i>10/20/68</i> GROUP: <i>James Earl Ray</i> NAME: <i>ASAC</i> ADDRESS: <i>James Earl Ray</i> NAME: <i>ASAC</i> CITY: <i>James Earl Ray</i> NAME: <i>ASAC</i>		MANIP. SPECIFICATION CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING VERTICAL				WIRING HARNESS AGC TO PSA B/G/N TO SPACECRAFT			
OTHER TOLERANCE				NAME: <i>ASAC</i> DATE: <i>10/20/68</i> CITY: <i>ASAC</i> ADDRESS: <i>ASAC</i> STATE: <i>ASAC</i> CITY: <i>ASAC</i>			
NEXT REVISION		DATE		NAME: <i>ASAC</i> DATE: <i>10/20/68</i> CITY: <i>ASAC</i> ADDRESS: <i>ASAC</i> STATE: <i>ASAC</i> CITY: <i>ASAC</i>		NAME: <i>ASAC</i> DATE: <i>10/20/68</i> CITY: <i>ASAC</i> ADDRESS: <i>ASAC</i> STATE: <i>ASAC</i> CITY: <i>ASAC</i>	
APPLICATION		DATE		NAME: <i>ASAC</i> DATE: <i>10/20/68</i> CITY: <i>ASAC</i> ADDRESS: <i>ASAC</i> STATE: <i>ASAC</i> CITY: <i>ASAC</i>		NAME: <i>ASAC</i> DATE: <i>10/20/68</i> CITY: <i>ASAC</i> ADDRESS: <i>ASAC</i> STATE: <i>ASAC</i> CITY: <i>ASAC</i>	

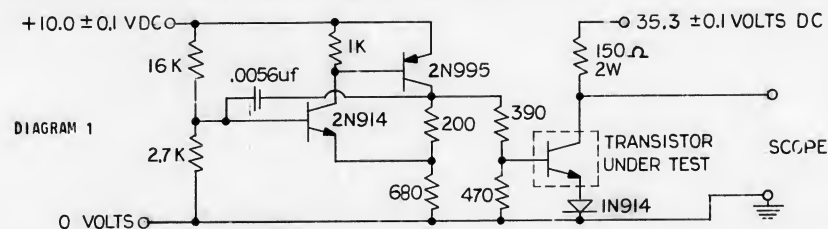
## NOTES:

1. MAKE FROM 1003520-1, AND RE-IDENTIFY AFTER COMPLETION OF TEST.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3. TEST REQUIREMENTS:
  - A.  $V_{CE0}$  SUSTAINED SHALL BE NLT 22 VOLTS WITH  $I_C = 10$  ma AND  $I_b = 0$  (MEASURED ON A CALIBRATED CURVE TRACER)



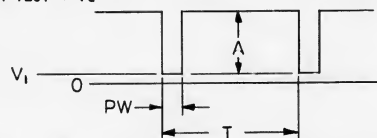
- B. THE UNITS WHICH MEET THE  $V_{CE0}$  SUSTAINED REQUIREMENT SHALL THEN BE TESTED IN THE FOLLOWING TEST CIRCUIT. UNITS WHICH EXHIBIT A DETERIORATED WAVEFORM AS SHOWN IN FIGURES 4, 5 & 6 SHALL BE REJECTED.

(1) TEST CIRCUIT: (ALL RESISTORS 1/4 W, 2% UNLESS OTHERWISE SPECIFIED)



- (2) THE WAVEFORM AS OBSERVED BETWEEN THE SCOPE TERMINALS SHALL HAVE THE FOLLOWING CHARACTERISTICS:  
A TYPE 541A SCOPE WITH A 53/54C PLUG IN OR EQUIVALENT SHALL BE USED. THE PROBE SHALL BE AN X10.

$V_i = V_{CE \text{ SAT. OF TRANSISTOR UNDER TEST}} + V_d$   
 $V_i = 0.8 \pm .3 \text{ VOLTS}$   
 $A = 34.5 \pm 1.0 V_{pp}$   
 $PW = 2.2 \pm 0.2 \mu s$   
 $T = 22 \pm 2 \mu s$



- (3) THE WAVEFORM SHALL NOT EXHIBIT ANY DETERIORATION IN THE FORM OF CLIPPING, CHIPPING OR OSCILLATING CONDITION AS SHOWN IN FIGURES 4, 5 AND 6



FIGURE 3

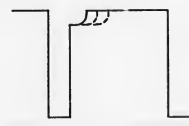


FIGURE 4

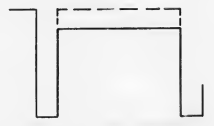


FIGURE 5

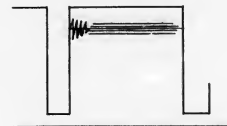


FIGURE 6

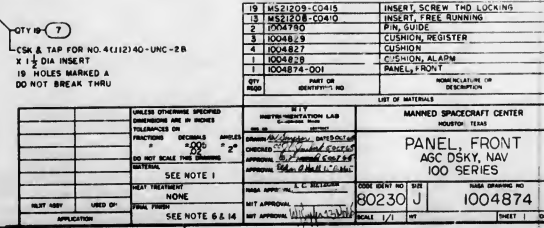
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
DO NOT SCALE FROM DRAWING		
MATERIAL		
SEE NOTE 1		
HEAT TREATMENT		
NEPT ASSY	USED ON	
APPLICATION		

1 1003520-1

TRANSISTOR

QTY REQD	PART OR IDENTIFYING NO	NAME/LOCATION OR DISPOSITION	TIME NO
LIST IN MATERIAL			
M I T INSTRUMENTATION LAB LABORATORY		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DATE 23 Aug 65	BY Raul Machado	TRANSISTOR TEST SELECTED	
DATE 23 Aug 65	BY Don Richards		
DATE 23 Aug 65	BY Elton C. Hall		
DATE 23 Aug 65	BY Michael J. Hall		
DATE 23 Aug 65	BY W. J. Hall		
80230 C	NONE	1004873	

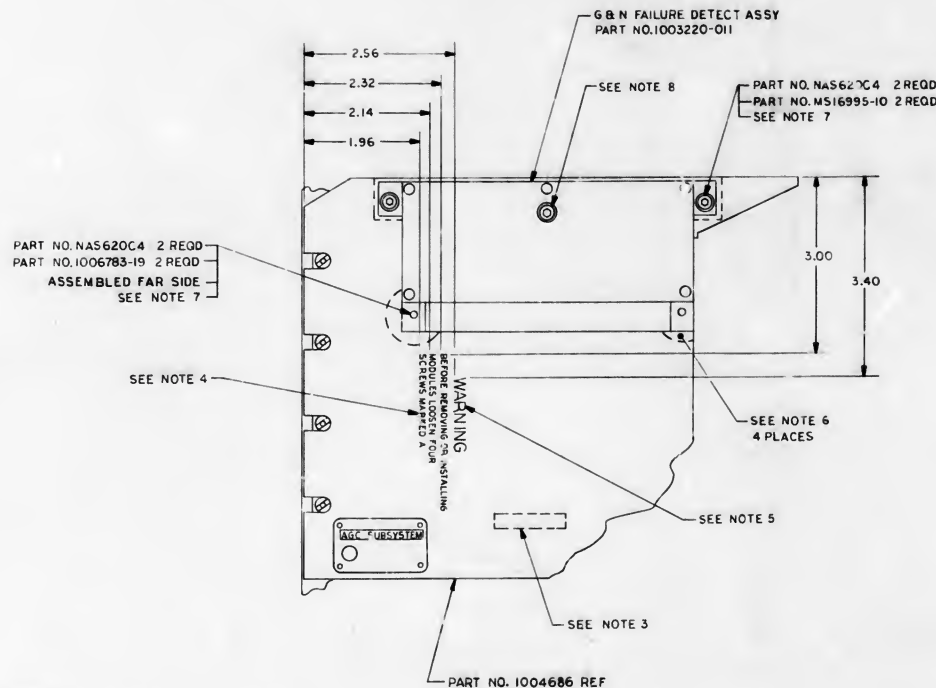






NOTES: 1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.  
2. DIMENSIONS ARE IN INCHES.  
3. DIMENSIONS ARE IN INCHES.  
4. DIMENSIONS ARE IN INCHES.  
5. DIMENSIONS ARE IN INCHES.  
6. DIMENSIONS ARE IN INCHES.  
7. DIMENSIONS ARE IN INCHES.  
8. DIMENSIONS ARE IN INCHES.

SYN		LINE		DESCRIPTION		REVISED PER		TDRR		DATE		APPROVED	
A				REVISED PER TDRR 25312		10/1/70		10/1/70		10/1/70		10/1/70	
B				REVISED PER TDRR 31631		10/1/70		10/1/70		10/1/70		10/1/70	



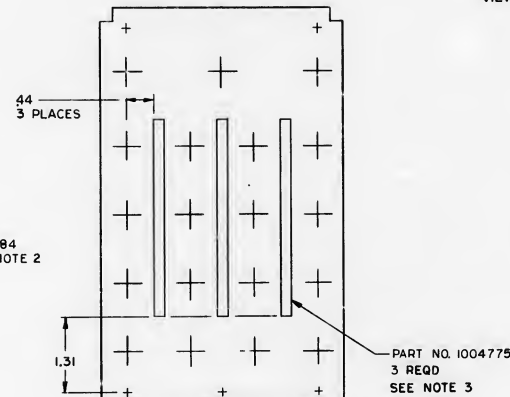
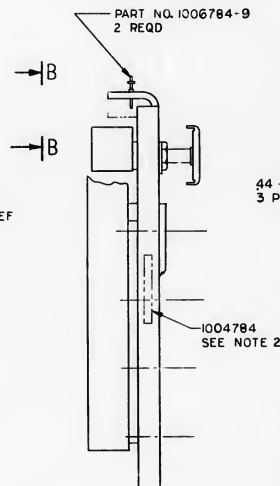
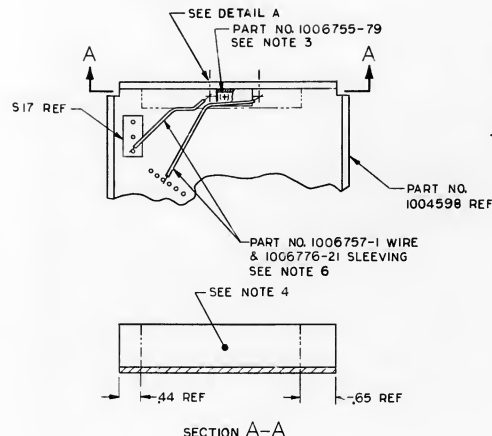
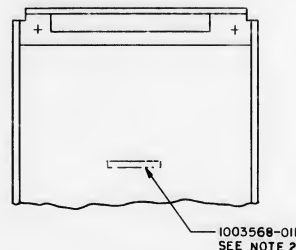
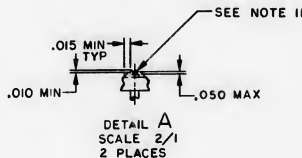
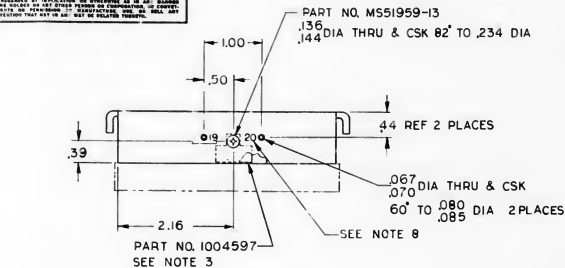
# NOTES

1. MAKE FROM TABLE I
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-7-70327
3. RE-IDENTIFY IN ACCORDANCE WITH R.I.B. NO. 0104049
4. MARK .08/10 HIGH WHITE CHARACTERS PER ND1002019 AND ND1002122, TYPE II, CLASS I, USING INK 1006271-I
5. MARK .18/20 HIGH WHITE CHARACTERS PER ND1002019 AND ND1002122, TYPE II, CLASS I, USING INK 1006271-I
6. AFTER ASSEMBLY OF PART NO. 1003220-011 TO PART NO. 1004686, TOUCH-UP INDICATED AREAS PER 1002040
7. MOUNTING TORQUE TO BE 3 TO 5 INCH-POUNDS.
8. MOUNTING TORQUE TO BE 3 TO 10 INCH-POUNDS AND SHALL BE TORQUED PRIOR TO MOUNTING SCREWS OF G AND N FAILURE DETECT ASSY.

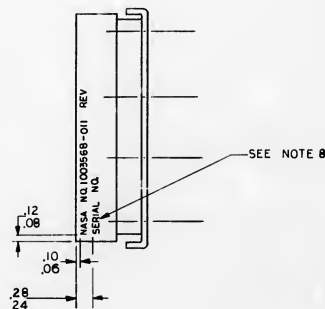
TABLE I	
PART NO.	MAKE FROM
1003563-031	1003707-031
1003563-021	1003707-021
1003563-011	1003707-011
1003563-041	1003576-011

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FINO NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN: <i>[Signature]</i>		INSTRUCTION DRAWING FOR R.I.B. NO. 0104049 AGC MAIN DSKY ASSY 100 SERIES		
CHECKED: <i>[Signature]</i>		CODE IDENT NO. 80230 SIZE D		
APPROVED: <i>[Signature]</i>		DRAWING NO. 1004879		
APPROVED: <i>[Signature]</i>		DATE SCALE 1/1 SHEET 1 OF 1		
NEXT ASSY USED ON		APPLICATION		

KIT REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FINISH NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB Cambridge, Mass		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
ES	DRAWN <i>W. G. Smith</i> CHECKED <i>R. G. Smith</i> APPROVED <i>Ed. G. Smith</i> APPROVED MIT <i>W. G. Smith</i>	DATE 9 DEC 65 21 DEC 65 21 DEC 65	INSTRUCTION DRAWING FOR KIT NO 8104096 KEYBOARD MODULE ASSEMBLY D18 AGC DSKY, MAIN	
	APPROVED <i>A. C. METZGER</i> ASC	DATE	CODE IDENT NO. SIZE 80230 D	DRAWING NO. 1004893
		SCALE 1/1	SHEET 1 OF	



- NOTES
1. MAKE FROM KEYBOARD MOD ASSY DWG NO. 1003548
  2. RE-IDENTIFY WITH PART NO. AS SHOWN IN ACCORDANCE WITH R. I. B.
  3. BOND 1006755-79 TO 1004597 AND 1004597 AND 1004755 TO 1004598 PER ND 1002004, TYPE V
  4. ENCAPSULATE INDICATED AREA PER ND 1002217
  5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-0-70327
  6. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
  7. WORKMANSHIP, FABRICATION & INSPECTION REQUIREMENTS PER ND1002069
  8. MARK .08 HIGH WHITE PER ND1002019 & ND1002127, TYPE II, CLASS I USING MARKING INK 1006271-1 APPROX AC SHOWN
  9. REMOVE TERMINAL MARKING NO.8 & 15
  10. + DENOTES POSITIVE SIDE OF CAPACITOR
  11. CUT TERMINALS 19 AND 20 AS SHOWN AND ENCAPSULATE PER ND1002004 TYPE VI



PART NO. 1004784  
PART NO. 1003568-011 ASSY

		CITY ROOM	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIRM NO.
		LIST OF MATERIALS				
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ RESISTOR VALUES ARE IN OHMS TOLERANCES ARE FRACTIONS DECIMALS ANGLES $\pm .005 \pm .005 \pm 2^\circ$ DO NOT SCALE THE DRAWING. MATERIAL	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANHATTEN SPACECRAFT CENTER HOUSTON, TEXAS		
	DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> APPROVED BY <i>[Signature]</i> MIT	D BASE 8-8 DOK-65		INSTRUCTION DRAWING FOR KIT NO. 8104095 KEYBOARD MODULE ASSEMBLY D17 AGC DSKY, NAV		
	APPROVED BY <i>[Signature]</i> A.C. METZGER	CODE IDENT NO.	SIZE	DRAWING NO.		
	APPROVED BY <i>[Signature]</i> A.C. METZGER	80230	D	i004894		
	SCALE 1/1	DATE	SHEET	OF		
APPLICATION						



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT ASSUMES NO RESPONSIBILITY FOR ANY INJURY, LOSS, OR DAMAGE, OR THE FACT THAT THE INFORMATION IS NOT THE PROPERTY OF THE GOVERNMENT. IN ANY WAY SUPPLIED THE DATA DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE RELEASED OR REPRODUCED OR OTHERWISE USED IN ANY MANNER, INCLUDING THE MAKING OF ANY OTHER PERSON OR CORPORATION, OR CONVEY, AND ANY RIGHTS OR PERMISSION TO REPRODUCE, USE OR SELL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

# REQUIREMENTS:

## 1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- UNITS SHALL MEET THE REQUIREMENTS OF MIL-S-19500 EXCEPT AS, AND IN ADDITION TO THE REQUIREMENTS, SPECIFIED HEREIN.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 2.
- UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS OF ND 1002051.

## E. MARKING:

- PARTS SHALL BE PERMANENTLY AND LEGIBLY MARKED, IN ACCORDANCE WITH ND 1002019, WITH THE NASA PART NUMBER (DRAWING NUMBER AND REVISION LETTER) OR AS MANY SIGNIFICANT DIGITS AS POSSIBLE (E.G. 6323). OTHER MARKING SUCH AS MANUFACTURER'S IDENTIFICATION AND TYPE NUMBER IS PERMISSIBLE.

## F. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS I, CODE 2.

- MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215.

## 2. ACCEPTANCE AND INSPECTION:

### A. MECHANICAL PROPERTIES:

- DIMENSIONS: AS DELINEATED HEREIN.

### B. SEAL TEST: THE UNITS SHALL BE SUBJECTED TO A HELIUM OR RADIFLO LEAK DETECTION TEST WITH A SENSITIVITY OF AT LEAST $1 \times 10^{-8}$ CC/ATM/SEC AND A HOT GLYCERINE BUBBLE TEST FOR GROSS LEAKS. THE LEAK TEST SHALL BE PERFORMED IN ACCORDANCE WITH MIL-STD-202C METHOD 112. TEST CONDITION C SHALL BE USED FOR THE HELIUM OR RADIFLO TEST. TEST CONDITION A SHALL BE USED FOR THE GROSS LEAK TEST EXCEPT THAT GLYCERINE SHALL REPLACE THE MINERAL OIL. A LEAKAGE RATE OF $1 \times 10^{-8}$ CC-ATM-SEC OR GREATER SHALL CONSTITUTE A FAILURE.

### C. ELECTRICAL CHARACTERISTICS: PER TABLES I, II, AND III AS LISTED BELOW:

- PRE-ELECTRICAL TEST PROCESSING: ON LOTS OF 500 OR LESS, THE TESTS OF TABLE I SHALL BE PERFORMED IN THE SEQUENCE INDICATED BEFORE THE TESTS OF TABLE II.
- ELECTRICAL TESTING: THE TESTS LISTED IN TABLE II SHALL BE PERFORMED AS LISTED BELOW:

COLLECTOR CUTOFF CURRENT  
COLLECTOR-BASE BREAKDOWN VOLTAGE  
EMITTER-BASE BREAKDOWN VOLTAGE  
EMITTER-BASE REVERSE CURRENT  
COLLECTOR-EMITTER SUSTAINING VOLTAGE  
COLLECTOR-EMITTER CURRENT  
COLLECTOR-EMITTER THRESHOLD CURRENT  
DIRECT CURRENT GAIN  
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE  
COLLECTOR CAPACITANCE  
TURN-ON AND TURN-OFF TIME

### (3) QUALITY DEMONSTRATION TESTING:

PER TABLE III ON LOTS MORE THAN 500 UNITS USING ACCEPTABLE UNITS FROM SUBGROUP 2 OF TABLE II FOR SUBGROUP 2,3, & 4 OF TABLE III. SUBGROUPS 1 & 5 MAY USE ELECTRICAL REJECTS FROM THE SAME LOT.

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES * * * DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

2009001

## REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDR			15-3-66	

## D. VENDOR SUPPLIED DATA: EACH SHIPMENT OF PARTS SHALL BE ACCOMPANIED BY THE FOLLOWING DOCUMENTATION.

- CERTIFICATE OF COMPLIANCE WITH LEAD MATERIAL REQUIREMENT.
- CERTIFICATE OF COMPLIANCE WITH ND 1015404, CLASS 2.
- "A CERTIFICATE OF COMPLIANCE WITH PARA 2.C (1) OR 2.C(3). UNITS USED IN QUALITY DEMONSTRATION TESTS OF TABLE III WILL NOT BE SHIPPED AS PART OF THE DELIVERY SCHEDULE BUT WILL BE FORWARDED UNDER SEPARATE COVER WITH TEST DATA FOR EACH LOT SHIPMENT.

## 3. DESIGN:

### A. STORAGE LIFE: INDEFINITE WHEN STORED AT TEMPERATURES BETWEEN -65°C AND +150°C.

### B. ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT.

- COLLECTOR-EMITTER VOLTAGE ( $V_{CE0}$ ): 35 VDC
- COLLECTOR-BASE VOLTAGE ( $V_{CB0}$ ): 60 VDC
- EMITTER-BASE VOLTAGE ( $V_{EB0}$ ): 5 VDC
- COLLECTOR CURRENT ( $I_C$ ): 600 MILLIAMPERES
- THERMAL RESISTANCE, JUNCTION-CASE ( $\theta_{JC}$ ): 50°C/WATT
- THERMAL RESISTANCE, JUNCTION-AMBIENT ( $\theta_{JA}$ ): 350°C/WATT
- TEMP. RANGE, JUNCTION, OPERATING: -65°C TO +150°C
- TEMP. RANGE, STORAGE: -65°C TO +150°C

## C. CONSTRUCTION:

- SEMICONDUCTOR: SILICON PLANAR EPITAXIAL NPN
- CASE: METAL CASE AND METAL HEADER HERMETICALLY SEALED (JEDEC TO -18)
- COLLECTOR SHALL BE ELECTRICALLY CONNECTED TO THE CASE INTERNALLY.
- LEAD MATERIAL: WELDABLE, GOLD PLATED, ANNEALED IRON-NICKEL-COBALT (KOVAR) ALLOY IN ACCORDANCE WITH ND 1015402.

## D. QUALITY ASSURANCE REQUIREMENTS:

- LOT DEFINITION: A GROUP OF PARTS IN A SINGLE PROCUREMENT SELECTED FROM A SINGLE CONTINUOUS PRODUCTION RUN USING LIKE MATERIALS WHICH ARE CONTROLLED USING A PROCESS WHICH IS THE SAME FROM THE BEGINNING TO THE END OF THE RUN.
- INSPECTION CONDITIONS: UNLESS OTHERWISE SPECIFIED, ALL INSPECTIONS SHALL BE MADE AT AN AMBIENT TEMPERATURE OF  $+25^\circ \pm 3^\circ$  C.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>G. Martz</i>		TRANSISTOR SILICON TYPE NPN, SWITCHING		
CHECKED <i>G. Martz</i> 5-3-66		SPECIFICATION CONTROL DRAWING		
APPROVED <i>E. C. Hall</i> 37 May 66		DRAWING NO. 1005002		
APPROVED <i>W. K. Metzger</i> 3 May 66		CODE IDENT NO. 80230	SIZE C	
APPROVED <i>A. C. Metzger</i>		DATE	SCALE	SHEET 1 OF 4

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A HERETOFORE RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSIONS, ERRORS, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER ENDORSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

2005002

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	INITIAL RELEASE CLASS A PER TORR 28542	5-3-66	

TABLE I

PRE-ELECTRICAL TEST PROCESSING

TEST	MIL-STD-750 TEST CONDITIONS	LOT	
		1 TO 500	OVER 500
THERMAL SHOCK *	METHOD 1056, CONDITION B (+150°C TO -65°C, 3 CYCLES)	100%	NO REQUIREMENT
STORAGE LIFE * (HIGH TEMPERATURE STABILIZATION)	METHOD 1031, Tstg = 150 ° ± 5°C, 72 +9 -4 HOURS		
CONSTANT ACCELERATION *	METHOD 2006 (20,000 G) Y AXIS		
POWER, BURN-IN *	METHOD 1026 P = 350 MILLIWATTS V <sub>CE</sub> = +20.0 VOLTS MINIMUM T <sub>A</sub> = +22°C MIN IN FREE AMBIENT AIR t = 168 +12 -6 HOURS		
SEAL TEST *	SEE NOTE 2.8		

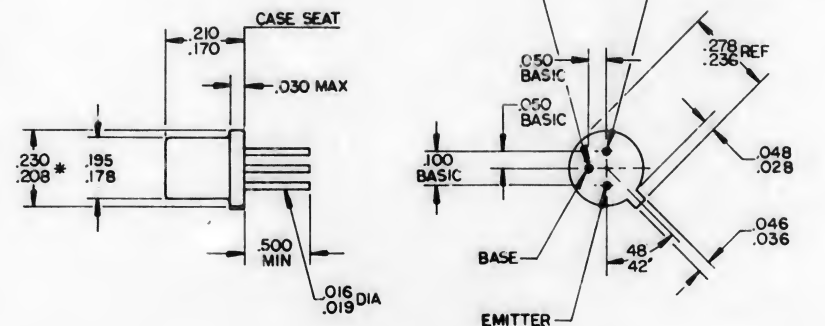
\*TEST TO BE PERFORMED IN ORDER INDICATED

\*\*PULSE ≤ 300μ SECS AT ≤ 2% DUTY CYCLE.

\*\*\*LTPD OR APER MIL-S-195000, TABLE CI OR CII

\*\*\*\*THE PARAMETER MEASURED MAY NOT CHANGE ANY GREATER THAN THE PERCENTAGE SPECIFIED BETWEEN THE INITIAL VALUE AND THE END OF TEST VALUE. VALUES OF COLLECTOR AND EMITTER CUTOFF CURRENTS LESS THAN 10 NANOAMPERES MAY BE CONSIDERED TO BE 10 NANOAMPERES FOR CALCULATING PERCENTAGE CHANGE.

⊗ CURRENTS TO WITHIN ±10%



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY: <i>A. Metzger</i> DATE: 5-3-66		TRANSISTOR, SILICON, TYPE NPN, SWITCHING	
CHECKED BY: <i>A. Metzger</i>		SPECIFICATION CONTROL DRAWING	
APPROVAL: <i>Eden C. Hill</i> 3 May 66			
NASA APPROVAL: <i>A. C. METZGER</i>		CODE IDENT NO. 80230	NASA DRAWING NO. 1005002
MIT APPROVAL: <i>[Signature]</i> 3 May 66		SCALE: NONE	WT
MIT APPROVAL: _____		SHEET 2 OF 4	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTE		
HEAT TREATMENT		
NONE		
FINAL FINISH		
NONE		
NEXT ASSY	USED ON	
APPLICATION		



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSION, WHATEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE POSSESSED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWING, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY REPLICATION OR OTHERWISE AS AN IMPLICIT LICENSE TO THE HOLDER OF ANY OTHER PERSON OR CORPORATION, OR INDIVIDUAL, TO REPRODUCE OR TO TRANSMIT IN ANY MANNER, OR TO MAKE ANY REPRODUCED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

2005002

REVISIONS					
SYM	DESCRIPTION	DR	CHK	DATE	APPROVED
-	INITIAL RELEASE CLASS A PER DRR 28542			5-3-66	

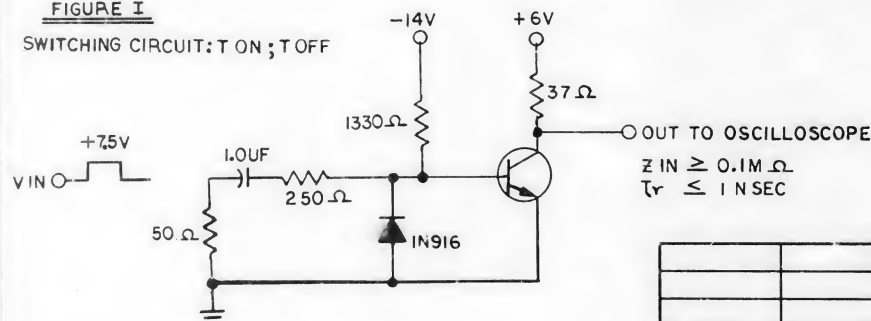
TABLE TT

ACCEPTANCE INSPECTION

TEST	SYMBOL	MIL-STD-750 TEST CONDITIONS T <sub>A</sub> = 25° ± 3°C UNLESS SPECIFIED	LIMIT		UNITS	LOT	
			MIN	MAX		1 TO 500	OVER 500
SUBGROUP 1 VISUAL AND MECHANICAL EXAMINATION		METHOD 2071				LTPD <sup>***</sup> = 10 MAX ACC NO. = 3	LTPD <sup>***</sup> = 10 MAX ACC NO. = 3
SUBGROUP 2							
COLLECTOR CUTOFF CURRENT	I <sub>CBO</sub>	V <sub>CB</sub> = 30 V; I <sub>E</sub> = 0		100		100%	LTPD <sup>**</sup> = 2 (COMBINED) MAX ACC NO. = 3
COLLECTOR CUTOFF CURRENT 150°C	I <sub>CBO</sub>	V <sub>CB</sub> = 30 V; I <sub>E</sub> = 0; T <sub>A</sub> = +150°C		200	uA		
COLLECTOR-BASE BREAKDOWN VOLTAGE	BV <sub>CBO</sub>	I <sub>C</sub> = 100uA; I <sub>E</sub> = 0	60		V		
EMITTER-BASE REVERSE CURRENT	I <sub>EBO</sub>	V <sub>EB</sub> = 3 V; I <sub>C</sub> = 0		100			
EMITTER-BASE BREAKDOWN VOLTAGE	BV <sub>EBO</sub>	I <sub>E</sub> = 100uA; I <sub>C</sub> = 0	5		V		
COLLECTOR-EMITTER SUSTAINING VOLTAGE**	V <sub>CEO</sub> SUST	I <sub>C</sub> = 30mA PULSED I <sub>B</sub> = 0	35		V		
COLLECTOR-EMITTER CURRENT RES. RETURN	I <sub>CER</sub>	V <sub>CE</sub> = 30 V; R <sub>BE</sub> = 100 K		10	uA		
COLLECTOR-EMITTER THRESHOLD CURRENT	I <sub>CEx</sub>	V <sub>BE</sub> = +0.35V; V <sub>CE</sub> = 40V; T <sub>A</sub> = +70°C		60	uA		
DC CURRENT GAIN **	h <sub>FE</sub>	I <sub>C</sub> = +500 mA; V <sub>CE</sub> = +10 V	25				
DC CURRENT GAIN **	h <sub>FE</sub>	I <sub>C</sub> = +150 mA; V <sub>CE</sub> = +10 V	40	120			
DC CURRENT GAIN **	h <sub>FE</sub>	I <sub>C</sub> = +10 mA; V <sub>CE</sub> = +10 V	30				
BASE-EMITTER SATURATION VOLTAGE **	V <sub>BE</sub> SAT	I <sub>C</sub> = 500 mA; I <sub>B</sub> = 50 mA	1.10	1.30	V		
COLLECTOR-EMITTER SATURATION VOLTAGE**	V <sub>CE(sat)</sub>	I <sub>C</sub> = 150 mA; I <sub>B</sub> = 15 mA		0.45	V		
COLLECTOR-EMITTER SATURATION VOLTAGE**	V <sub>CE(sat)</sub>	I <sub>C</sub> = 500 mA; I <sub>B</sub> = 50 mA		1.0	V		
COLLECTOR CAPACITANCE	C <sub>ob</sub>	V <sub>CB</sub> = -10 V; I <sub>E</sub> = 0; F = 0.14 mc		8	PF	LTPD <sup>***</sup> = 5 MAX ACC NO = 0	LTPD <sup>***</sup> = 5 MAX ACC NO = 0
TURN ON TIME	t <sub>on</sub>	I <sub>B1</sub> ≈ 150 mA; I <sub>C</sub> ≈ 150 mA t <sub>w</sub> > 400 nsec 2% DUTY CYCLE		15	NSEC		
TURN OFF TIME	t <sub>off</sub>	I <sub>B1</sub> = I <sub>B2</sub> ≈ 150 mA; I <sub>C</sub> ≈ 150 mA t <sub>w</sub> > 400 nsec 2% DUTY CYCLE		40	NSEC		

FIGURE I

SWITCHING CIRCUIT: T ON; T OFF



VOLTAGE IN:  $V_{IN} = +7.5\text{ V}$   
PULSE WIDTH:  $PW = 0.5\mu\text{SEC}$   
TOTAL RISE, FALL:  $\tau_r + \tau_f \leq 6\text{ NSEC}$   
IMPEDANCE IN:  $Z_{IN} = 50\Omega$

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS    DECIMALS    ANGLE $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN		TRANSISTOR, SILICON, TYPE NPN, SWITCHING SPECIFICATION CONTROL DRAWING		
CHECKED	<i>A. M. ...</i>			
APPROVED	<i>Edmond Hall</i>			
APPROVED MIT	<i>W. J. ...</i>	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC	<i>G. METZGER</i>	80230	C	1005002
DATE	SCALE	SHEET 3 OF 4		



NOTICE - WHEN GOVERNMENT SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY INFORMATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT HAS PROVIDED SUCH DATA IS NOT TO BE REGARDED AS IMPLICATION OR ENDORSEMENT AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PRIVILEGES TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY BE IN ANY WAY BE RELATED THEREBY.

2005002

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TORR 28542			5-3-66	

TABLE III

QUALITY DEMONSTRATION TESTS		LOT	
TEST	MIL-STD-750 TEST CONDITIONS	1 TO 500	OVER 500
SUBGROUP 1 PHYSICAL DIMENSIONS	METHOD 2066	NO REQUIREMENTS	LTPD = 20 MAX ACC NO. = 1
SUBGROUP 2* THERMAL SHOCK	METHOD 1056.1 (+150 °C TO -65 °C, 5 CYCLES)		LTPD = 10 (COMBINED) MAX ACC NO. = 3
SEAL TEST	SEE NOTE 2.B		
SUBGROUP 3* STORAGE LIFE	METHOD 1031.1 T <sub>stg</sub> = 150 ° ± 5 °C, 1000 HOURS		LTPD = 10 (COMBINED) MAX ACC NO. = 3
SHOCK	METHOD 2016.1 1500 G, 0.5 MSEC 5 BLOWS EACH IN X1, Y1, Y2, Z1 DIRECTIONS, 20 BLOWS TOTAL		
VIBRATION VARIABLE FREQUENCY	METHOD 2056, 30 G FROM 5 TO 2000 CPS LIMITED TO 0.12 DOUBLE AMPLITUDE, 3 CYCLES, 15 MINUTES PER CYCLE MINIMUM.		
CONSTANT ACCELERATION	METHOD 2006, 20,000 G Y AXIS		
SUBGROUP 4 OPERATION LIFE	METHOD 1026.1 P = 350 MILLIWATTS V <sub>CE</sub> = +20 VOLTS MINIMUM T <sub>A</sub> = +22 °C MIN IN FREE AMBIENT AIR t = 1000 HOURS	** = 10 MAX ACC NO. = 5	
SUBGROUP 5* LEAD TENSION (COND. A) LEAD FATIGUE (COND. E)	METHOD 2036.1 4 POUND LOAD FOR 10 SECONDS 3 ARCS	LTPD = 20 (COMBINED) MAX ACC NO. = 3	

TABLE III (CONTINUED)

TEST	SYMBOL	TEST CONDITION	LIMIT
END POINTS FOR SUBGROUP 2 COLLECTOR CUTOFF CURRENT	I <sub>CBO</sub>	V <sub>CB</sub> = 30 V, I <sub>E</sub> = 0	±50% ****
EMITTER-BASE REVERSE CURRENT	I <sub>EB0</sub>	V <sub>EB</sub> = +3 V, I <sub>C</sub> = 0	±50% ****
DC CURRENT GAIN	h <sub>FE</sub>	V <sub>CE</sub> = +10 V, I <sub>C</sub> = 150 mA	±10% ****
END POINTS FOR SUBGROUPS 3 & 4 COLLECTOR CUTOFF CURRENT	I <sub>CBO</sub>	V <sub>CB</sub> = +30 V, I <sub>E</sub> = 0	±100% ****
EMITTER-BASE REVERSE CURRENT	I <sub>EB0</sub>	V <sub>EB</sub> = +3 V, I <sub>C</sub> = 0	±100% ****
DC CURRENT GAIN	h <sub>FE</sub>	V <sub>CE</sub> = +10 V, I <sub>C</sub> = 150 mA	±20% ****

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING
	MATERIAL
NEXT ASSY	USED ON
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN CHECKED <i>A. Metzger</i> 5-3-66 APPROVED APPROVED <i>Edison C. Hall</i> 3/24/66		TRANSISTOR, SILICON TYPE NPN, SWITCHING		
APPROVED <i>W. R. Kuffer</i> 3/24/66 MIT A. C. METZGER APPROVED MSC		CODE IDENT NO. 80230	SIZE C	DRAWING NO. 1005002
DATE		SCALE	SHEET 4 OF 4	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELIBERATE OR UNDELIBERATE ERROR, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, OR OTHER DATA NOT TO BE REPRODUCED BY REPLICATION OR OTHERWISE AS IN OR OTHER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHT OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

# REQUIREMENTS:

## 1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 3.
- C. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH MIL-C-12000. CONTAINER (SPOOL OR BARREL) SHALL BE MARKED IN ACCORDANCE WITH MIL-C-12000 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, LOT OR SERIAL NUMBER, DATE OF MANUFACTURE OR CODING, NASA DRAWING NUMBER, REVISION LETTER, AND DASH NUMBER, QUANTITY ENCLOSED AND THE PRECAUTIONARY WORDS "FRAGILE", "THIS END UP" AND "DO NOT DROP OR ROLL".
  - \*1. WIRE SHALL BE COILED AND FURNISHED IN A BARREL PACK. THE BARREL DIAMETER SHALL BE 20 INCHES AND THE MINIMUM DIAMETER OF THE COIL SHALL BE 13 INCHES.
    - \* FOR OTHER THAN MACHINE WIRE-WRAPPING, WIRE MAY BE COILED AND FURNISHED ON A SPOOL.

## 2. ACCEPTANCE AND INSPECTION:

### A. MECHANICAL REQUIREMENTS:

- (1) INSULATION: COLOR, YELLOW
- (2) DIAMETER OF CONDUCTOR: 0.010 INCH  $\pm 0.0003$ ,  $-0.0001$  INCH.
- (3) DIAMETER OVER INSULATION: 0.021 INCH,  $\pm 0.0015$  INCH.
- (4) MINIMUM CONTINUOUS LENGTH: 500 FEET.
- (5) FLAMMABILITY: INSULATION SHALL NOT SUPPORT COMBUSTION.
- (6) STRIP FORCE: THE INSULATION PULL-OFF FORCE FOR A 3 INCH STRIP SHALL BE 8 OUNCES MINIMUM, 3 POUNDS MAXIMUM.

### B. ELECTRICAL CHARACTERISTICS: AT 25°C $\pm 5^\circ\text{C}$ .

- (1) DC RESISTANCE: 115 OHMS MAXIMUM PER 1000 FEET.
- (2) VOLTAGE RATING: 600 VOLTS RMS.
- (3) DIELECTRIC STRENGTH: 1500 VOLTS RMS, MINIMUM AFTER 4 HOURS IN WATER 25°C PLUS OR MINUS 5°C.
- (4) INSULATION RESISTANCE: 2500 MEGOHMS MINIMUM PER 1000 FEET AFTER 4 HOURS IN WATER 25°C PLUS OR MINUS 5°C.

### C. VENDOR SUPPLIED DATA: EACH SHIPMENT OF WIRE SHALL BE ACCOMPANIED BY THE FOLLOWING DOCUMENTATION.

- (1) CERTIFICATE OF COMPLIANCE WITH DESIGN REQUIREMENTS.

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

## 3. DESIGN:

- A. OPERATING TEMPERATURE: 130°C MAXIMUM.
- B. TENSILE STRENGTH: 33,000 POUNDS PER SQUARE INCH MINIMUM, 42,000 PSI MAXIMUM.
- C. ELONGATION: 12 PERCENT MINIMUM, 25 PERCENT MAXIMUM.
- D. SPLICES: SPLICES OF THE CONDUCTOR SHALL BE ELECTRO-WELDED BEFORE FINAL PACKAGING AND SHALL BE OF THE BUTT TYPE. 2" ON EITHER SIDE OF SPlice SHALL BE STRIPPED ON INSULATION.
- E. DIELECTRIC CONSTANT: 3.3 MAXIMUM AT 1 MC AND 77°F.
- F. CONCENTRICITY: AT ANY CROSS SECTION ALONG THE LENGTH OF THE COMPLETED WIRE THE MINIMUM THICKNESS OF THE INSULATION SHALL NOT BE LESS THAN 41 PERCENT OF THE DIFFERENCE BETWEEN THE MEASURED DIAMETER OVER THE INSULATION AND THE MEASURED DIAMETER OVER THE CONDUCTOR, OR NOT LESS THAN 70 PERCENT OF THE MAXIMUM THICKNESS AT THAT CROSS-SECTION.
- G. HEAT RESISTANCE: INSULATION SHALL WITHSTAND 1500 VOLTS MINIMUM AFTER 96 HOURS AT 150°C.
- H. COLD BEND: INSULATION SHALL WITHSTAND 1500 VOLTS MINIMUM AFTER 4 HOURS AT -65°C AND BENT AROUND A 1/2 INCH DIAMETER MANDREL.
- J. INSULATION CUT-THROUGH: AT A TEMPERATURE OF 50°C THE INSULATION SHALL RESIST THE PENETRATION OF A METAL BLADE 0.003 INCH  $\pm 0.0002$  INCH THICK WITH 750 GRAMS APPLIED AT THE POINT OF CONTACT FOR 24 HOURS. THERE SHALL BE NO ELECTRICAL CONTINUITY BETWEEN THE BLADE AND THE CONDUCTOR WHEN A POTENTIAL OF 500 VOLTS RMS IS APPLIED.
- K. MINIMUM CURL OF WIRE: WHEN A 30 INCH LENGTH OF WIRE IS CUT FROM A BARREL, THE WIRE, WHEN LYING UNRESTRAINED ON A SMOOTH, FLAT SURFACE, SHALL NOT CURL UP TO A DIAMETER OF LESS THAN 10 INCHES WITHIN ONE MINUTE AT AMBIENT TEMPERATURES.
- L. SPARK TEST: 2000 VOLTS RMS.
- M. MATERIAL OF CONDUCTOR: SOLID, OXYGEN FREE HIGH CONDUCTIVITY, COPPER, CERTIFIED GRADE, REF ASTM-B-170 SILVER PLATED 40 MICROINCHES MINIMUM, 80 MICROINCHES MAXIMUM.
- N. WORKMANSHIP: THE SURFACE OF THE FINISHED WIRE SHALL BE CLEAN, SMOOTH, FREE FROM FOREIGN RESIDUE AND FREE FROM VISIBLE BLEMISHES. THERE SHALL BE NO IMPERFECTIONS WHICH INCREASE THE OVERALL DIAMETER SO AS TO EXCEED THE MAXIMUM SPECIFIED. THE INSULATION SHALL BE UNIFORM THROUGHOUT AND FREE FROM ANY DEFECTS SUCH AS INCLUSIONS, RADIAL CRACKS, PINHOLES, DISCOLORATION OF CONDUCTOR OR INSULATION WHICH MAY AFFECT ITS SERVICEABILITY OR REQUIRE SPECIAL HANDLING.
- P. MATERIAL IS A POLYIMIDE FILM.
- R. INTENDED USE: MATERIAL WILL BE USED AS A WIRE-WRAP WIRE IN POTTED ASSEMBLIES.

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
		INITIAL RELEASE CLASS A PER TDRR 29120			5-24-66

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS									
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
DRAWN <i>Kulshammer</i> 7/1/66				WIRE, ELECTRICAL, INSULATED, SOLID					
CHECKED <i>A. Metzger</i> 17 May 66									
APPROVED <i>E. C. Hall</i> 24 May 66				SPECIFICATION CONTROL DRAWING					
APPROVED MIT <i>M. G. Metzger</i> 5/24/66				CODE IDENT NO. SIZE		DRAWING NO.			
APPROVED MSC <i>A. G. Metzger</i>				80230 C		1005005			
DATE				SCALE NONE		SHEET 1 OF 1			

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
CAPACITOR VALUES ARE IN  $\mu\text{f}$   
RESISTOR VALUES ARE IN OHMS  
TOLERANCES ON  
FRACTIONS DECIMALS ANGLES  
 $\pm$   $\pm$   $\pm$   
DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTES

NEXT ASSY USED ON APPLICATION



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELUSION, WHETHER OR NOT SUCH DELUSION IS CAUSED BY THE GOVERNMENT'S NEGLIGENCE, AND THE FACT THAT THE GOVERNMENT HAS BEEN ADVISED OF SUCH DELUSION DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY KIND. ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

TABLE I

## GENERAL PROPERTIES

PROPERTIES	TEST METHOD	RATING	UNITS
<b>PHYSICAL AND CHEMICAL</b>			
RADIATION RESISTANCE @ 25°C	COBALT 60 SOURCE	100	MEGAREAD
WATER ABSORPTION @ 25°C	ASTM D-570	0.2	% 7 DAYS
TEMPERATURE RANGE		-65 TO 250	°C
THERMAL CONDUCTIVITY 25°C THRU 100°C	CENCO-FITCH	6.0 X 10 <sup>-4</sup>	CAL/cm <sup>2</sup> /°C/SEC/cm
WEIGHT LOSS AFTER 96 HOURS @ 200°C		3.7	%
VOLUME EXPANSION 25°C THRU 150°C		5.0 X 10 <sup>-2</sup>	cc/cc/°C
SPECIFIC HEAT		0.33	CAL/cm/°C
BRITTLE POINT	ASTM D-706	-100	°C
<b>MECHANICAL</b>			
TENSILE STRENGTH	ASTM D-412	450	psi
ELONGATION	ASTM D-412	120	%
HARDNESS DUROMETER	ASTM D-676	60	SHORE A
SHRINKAGE, LINEAR @ 25°C		0.4	% 3 DAYS
<b>ELECTRICAL</b>			
ARC RESISTANCE	ASTM D-495	125	SECONDS
DIELECTRIC CONSTANT @ 25°C	ASTM D-150		
@ 10 <sup>2</sup> CPS		3.2	
@ 10 <sup>3</sup> CPS		3.2	
@ 10 <sup>6</sup> CPS		3.1	
@ 10 <sup>9</sup> CPS		2.95	
DISSIPATION FACTOR @ 25°C	ASTM D-150		
@ 10 <sup>2</sup> CPS		0.000	
@ 10 <sup>3</sup> CPS		0.015	
@ 10 <sup>6</sup> CPS		0.005	
@ 10 <sup>9</sup> CPS		0.005	
ELECTRIC STRENGTH 1/16" SAMPLE	ASTM D-149	600	VOLTS/MIL
VOLUME RESISTIVITY 500 V, DC	ASTM D-257	3 X 10 <sup>14</sup>	OHM/cm

## REQUIREMENTS:

## 1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 3.
- C. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS II.
- (1) MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215 AND SHALL INCLUDE EXPIRATION DATE.

## 2. ACCEPTANCE AND INSPECTION:

## A. PROPERTIES:

- (1) COLOR AND BODY: WHITE LIQUID RESIN.
- (2) VISCOSITY: 30,000 CENTIPOISES MEASURED ON A BROOKFIELD VISCOMETER, NO. 4 SPINDLE, 2 RPM AT 25°C ± 2°C, PER ASTM D-445.
- (3) SPECIFIC GRAVITY: 1.47 PER ASTM D-792.

## 3. DESIGN:

- A. DESCRIPTION: THE SILICONE RUBBER AS DESCRIBED HEREIN IS A FIRE RESISTANT (SELF EXTINGUISHING) ENCAPSULANT, WHITE IN COLOR, WITH A MEDIUM VISCOSITY THAT CURES READILY IN DEEP SECTIONS (1" DEPTH IN METAL CAN) TO A HIGH DUROMETER, HIGH STRENGTH RUBBER AND HAS GOOD CORROSION RESISTANCE.

- B. SHALL BE DESIGNED TO HAVE PROPERTIES, AFTER BEING MIXED WITH CATALYST IN A 10 TO 1 RATIO PER THE MANUFACTURER'S INSTRUCTIONS, PER TABLE I, OTHER PROPERTIES ARE:

- (1) DEEP SECTION CURE: MATERIAL SHALL BE CAPABLE OF A DEEP SECTION CURE TO A 1" DEPTH IN A METAL CAN.
- (2) CORROSION RESISTANCE: CORROSION RESISTANCE OF MATERIAL SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF MIL-S-23586.
- (3) THERMAL SHOCK: MATERIAL SHALL BE CAPABLE OF WITHSTANDING 10 CYCLES OF THERMAL SHOCK PER MIL-I-16223C.
- (4) FIRE RESISTANCE: MATERIAL SHALL BE FIRE RESISTANT, SELF EXTINGUISHING PER ASTM D-1492.

- C. STORAGE: THE SILICONE RUBBER SHALL BE STORED IN CLOSED CONTAINERS AT TEMPERATURES OF 70°F OR LESS UPON RECEIVING FROM VENDOR.

- D. SHELF LIFE: WHEN STORED AT 70°F OR LESS THE AS RECEIVED MATERIAL SHALL HAVE A SHELF LIFE OF AT LEAST 12 MONTHS.

PRODUCE ONLY FROM APPROVED SOURCES AS LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS    DECIMALS    ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	SEE NOTE
APPLICATION		

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
		ORIGINATED AND RELEASED PER TDNR 33080			23 FEB 67

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>Rob Smith</i>	1-18-67	<b>COMPOUND, SILICONE RUBBER SPECIFICATION CONTROL DRAWING</b>		
CHECKED <i>Sam B. Smith</i>	1-18-67			
APPROVED <i>A. Smith</i>	1/18/67			
APPROVED <i>Ed C. Hall</i>	2/11/67			
APPROVED <i>Rob Smith</i>	2/4/67			
APPROVED <i>MSC</i>	DATE	CODE IDENT NO.	SIZE	DRAWING NO.
		80230	C	1005008
SCALE NONE		SHEET 1 OF 1		



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELAYATION, WEATHER, FURNISHED, OR IN ANY WAY SUPPLEMENTED, OR OTHERWISE AS IN ANY MANNER, INCLUDING THE DESIGN OR ANY OTHER PROCEEDING OR CORPORATION, OR CONVERTING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

TABLE I  
GENERAL PROPERTIES

PROPERTIES	TEST METHOD	RATING	UNITS
<b>PHYSICAL AND CHEMICAL</b>			
RADIATION RESISTANCE @ 25°C	CUBALT 60 SOURCE	100	MEGARAD
WATER ABSORPTION @ 25°C	ASTM D-570	0.2	% 7 DAYS
TEMPERATURE RANGE		-65 TO 300	°C
THERMAL CONDUCTIVITY 25°C THRU 100°C	CENCO-FITCH	$7.7 \times 10^{-4}$	CAL/cm <sup>2</sup> /°C/SEC/cm
WEIGHT LOSS AFTER 96 HOURS @ 200°C		5.7	%
VOLUME EXPANSION 25°C THRU 150°C		$5.2 \times 10^{-4}$	cc/cc/°C
SPECIFIC HEAT		0.32	CAL/gm/°C
BRITTLE POINT	ASTM D-746	-100	°C
<b>MECHANICAL</b>			
TENSILE STRENGTH	ASTM D-412	650	psi
ELONGATION	ASTM D-412	100	%
HARDNESS DUROMETER	ASTM D-676	65	SHORE A
SHRINKAGE, LINEAR @ 25°C		0.3	% 3 DAYS
<b>ELECTRICAL</b>			
ARC RESISTANCE	ASTM D-495	125	SECONDS
DIELECTRIC CONSTANT @ 25°C	ASTM D-150		
@ 10 <sup>2</sup> CPS		3.8	
@ 10 <sup>3</sup> CPS		5.8	
@ 10 <sup>6</sup> CPS		3.7	
@ 10 <sup>9</sup> CPS		3.5	
DISSIPATION FACTOR @ 25°C	ASTM D-150		
@ 10 <sup>2</sup> CPS		0.030	
@ 10 <sup>3</sup> CPS		0.040	
@ 10 <sup>6</sup> CPS		0.003	
@ 10 <sup>9</sup> CPS		0.004	
ELECTRIC STRENGTH 1/16" SAMPLE	ASTM D-149	550	VOLTS/MIL
VOLUME RESISTIVITY 500 V, DC	ASTM D-257	$5 \times 10^{13}$	OHM/cm

C. STORAGE: THE SILICONE RUBBER SHALL BE STORED IN CLOSED CONTAINERS AT TEMPERATURES OF 70°F OR LESS UPON RECEIVING FROM VENDOR.

D. SHELF LIFE: WHEN STORED AT 70°F OR LESS THE AS RECEIVED MATERIAL SHALL HAVE A SHELF LIFE OF AT LEAST 12 MONTHS.

# REQUIREMENTS:

## 1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 3.
- PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS II.
  - MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215 AND SHALL INCLUDE EXPIRATION DATE.

## 2. ACCEPTANCE AND INSPECTION:

- PROPERTIES:
  - COLOR AND BODY: RED LIQUID RESIN.
  - VISCOSITY: 30,000 CENTIPOISES MEASURED ON A BROOKFIELD VISCOMETER, NO. 4 SPINDLE, 2 RPM AT 25°C ± 2°C PER ASTM D-405.
  - SPECIFIC GRAVITY: 1.47 PER ASTM D-792.

## 3. DESIGN:

- DESCRIPTION: THE SILICONE RUBBER AS DESCRIBED HEREIN IS A FIRE RESISTANT (SELF EXTINGUISHING) ENCAPSULANT, RED IN COLOR, WITH A MEDIUM VISCOSITY THAT CURES READILY IN DEEP SECTIONS (1" DEPTH IN METAL CAN) TO A HIGH DUROMETER, HIGH STRENGTH RUBBER, AND HAS GOOD CORROSION RESISTANCE.
- SHALL BE DESIGNED TO HAVE PROPERTIES, AFTER BEING MIXED WITH CATALYST IN A 10 TO 1 RATIO PER THE MANUFACTURER'S INSTRUCTIONS, PER TABLE I, OTHER PROPERTIES ARE:
  - DEEP SECTION CURE: MATERIAL SHALL BE CAPABLE OF A DEEP SECTION CURE TO A 1" DEPTH IN A METAL CAN.
  - CORROSION RESISTANCE: CORROSION RESISTANCE OF MATERIAL SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF MIL-S-23586.
  - THERMAL SHOCK: MATERIAL SHALL BE CAPABLE OF WITHSTANDING 10 CYCLES OF THERMAL SHOCK PER MIL-I-16923C.
  - FIRE RESISTANCE: MATERIAL SHALL BE FIRE RESISTANT, SELF EXTINGUISHING PER ASTM D-1692.

PROCURE ONLY FROM APPROVED SOURCES AS LISTED IN ND 1002034 FOR THIS DRAWING.

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
		ORIGINATED AND RELEASED PER TDRR 33080			23 FEB 67

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>R.E. Smith</i>	1/18/67	COMPOUND, SILICONE RUBBER SPECIFICATION CONTROL DRAWING		
CHECKED <i>W.H. J. Smith</i>	1/18/67			
APPROVED <i>W.H. J. Smith</i>	1/18/67			
APPROVED <i>Edna C. Hall</i>	10/24/67			
APPROVED <i>CCB</i>	2/2/67	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>AMT</i>	2/14/67	80230	C	1005009
DATE	SCALE	SHEET 1 OF 1		

SEE NOTE

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR A WARRANTY IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHT OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

## REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
		ORIGINATED AND RELEASED PER TDRR 30080			23 FEB 67	<i>Euf</i>

## REQUIREMENTS:

## 1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 3.
- C. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS II.
  - (1) MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215 AND SHALL INCLUDE EXPIRATION DATE.

## 2. ACCEPTANCE AND INSPECTION (SAMPLING):

## A. PHYSICAL PROPERTIES:

- (1) COLOR: LIGHT TAN
- (2) CONSISTENCY: PASTE

## B. VENDOR SUPPLIED DATA: EACH SHIPMENT OF MATERIAL SHALL BE ACCOMPANIED BY THE FOLLOWING DOCUMENTATION.

- (1) CERTIFICATE OF COMPLIANCE WITH ND 1015404, CLASS 3.

## 3. DESIGN:

- A. STORAGE: THE CATALYST SHALL BE STORED IN CLOSED CONTAINERS AT TEMPERATURES OF 70°F OR LESS UPON RECEIVING FROM VENDOR.
- B. SHELF LIFE: WHEN STORED AT 70°F OR LESS THE AS RECEIVED MATERIAL SHALL HAVE A SHELF LIFE OF AT LEAST 12 MONTHS.
- C. DESCRIPTION: THE CURING AGENT AS DESCRIBED HEREIN CONSISTS OF A ORGANOMETALLIC COMPOUND AND INERT FILLERS IN A SILICONE POLYMER, CONTAINING STANNOUS OCTOATE AS ITS ACTIVE INGREDIENT, IT IS A FAST CURE (15 MINUTES TO 4 HOURS), LIGHT TAN PASTE.
- D. CURE TIME: 15 MINUTES TO 4 HOURS-FAST CURE.
- E. APPLICATION: THIS CATALYST IS INTENDED TO BE MIXED WITH ENCAPSULANTS IN THE PROPORTION OF 1 PART CURING AGENT TO 10 PARTS ENCAPSULANT (BY WEIGHT) AND CURED AT ROOM TEMPERATURE IN FROM 15 MINUTES TO 4 HOURS.

PROCURE ONLY FROM APPROVED SOURCES AS LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE 11" INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS:				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>R. L. Smith</i> 1/18/67		<b>CURING AGENT</b>  <b>SPECIFICATION CONTROL DRAWING</b>		
CHECKED <i>H. M. Hunter</i> 1/28/67				
APPROVED <i>C. H. Hunter</i> 1/28/67				
APPROVED				
APPROVED <i>C. H. Hunter</i>	2/13/67	CODE IDENT. NO.	SIZE	DRAWING NO.
MSC	DATE	80230	C	1005010
SCALE NONE		SHEET 1 OF 1		

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSION, MISTAKE, ERROR, EVEN AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSE THE USER OR ANY OTHER PERSON OR CORPORATION, OR CONVERTING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
		ORIGINATED AND RELEASED PER TDNR 33080			23 Feb 67

# REQUIREMENTS:

## 1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 3.
- C. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS II.
  - (1) MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215 AND SHALL INCLUDE EXPIRATION DATE.

## 2. ACCEPTANCE AND INSPECTION (SAMPLING)\*

- A. PHYSICAL PROPERTIES:
  - (1) COLOR: LIGHT BLUE
  - (2) CONSISTENCY: PASTE
- B. VENDOR SUPPLIED DATA: EACH SHIPMENT OF MATERIAL SHALL BE ACCOMPANIED BY THE FOLLOWING DOCUMENTATION.
  - (1) CERTIFICATE OF COMPLIANCE WITH ND 1015404, CLASS 3.

## 3. DESIGN:

- A. STORAGE: THE CATALYST SHALL BE STORED IN CLOSED CONTAINERS AT TEMPERATURES OF 70°F OR LESS UPON RECEIVING FROM VENDOR.
- B. SHELF LIFE: WHEN STORED AT 70°F OR LESS THE AS RECEIVED MATERIAL SHALL HAVE A SHELF LIFE OF AT LEAST 12 MONTHS.
- C. DESCRIPTION: THE CURING AGENT AS DESCRIBED HEREIN CONSISTS OF A ORGANOMETALLIC COMPOUND AND INERT FILLERS IN A SILICONE POLYMER, CONTAINING DIBUTYL TIN DILAURATE AS ITS ACTIVE INGREDIENT, IT IS A STANDARD RATE OF CURE (APPROXIMATELY 6 HOURS), LIGHT BLUE PASTE.
- D. CURE TIME: 6 HOURS - STANDARD CURE.
- E. APPLICATION: THIS CATALYST IS INTENDED TO BE MIXED WITH ENCAPSULANTS IN THE PROPORTION OF 1 PART CURING AGENT TO 10 PARTS ENCAPSULANT (BY WEIGHT) AND CURED AT ROOM TEMPERATURE IN APPROXIMATELY 6 HOURS.

PROCURE ONLY FROM APPROVED SOURCES AS LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS    DECIMALS    ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	SEE NOTE
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	<i>C.T. Smith</i>	1/18/67	CURING AGENT  SPECIFICATION CONTROL DRAWING	
CHECKED	<i>H.M. Shreve</i>	1/18/67		
APPROVED	<i>C. Smith</i>	1/18/67		
APPROVED	<i>Edmund Hall</i>	2/23/67		
APPROVED	<i>C.T. Smith</i>	2/23/67	CODE IDENT NO.	SIZE
MSC	<i>A. W. G. Jr.</i>	2/14/67	80230	C
DATE		SCALE	NONE	SHEET 1 OF 1



NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, EXPRESSED, OR IN ANY WAY SUPPORTED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER, CERTIFYING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

#### NOTES:

1. GENERAL REQUIREMENTS:
  - A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
  - B. SUPPLIERS SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 3.
  - C. PREPARATION FOR DELIVERY: PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS 2, CODE 2.
  - D. MARKING: UNIT PACKAGES AND EXTERIOR SHIPPING CONTAINERS SHALL BE MARKED IN ACCORDANCE WITH ND 1002215 WITH THE NASA PART NUMBER (DRAWING NUMBER, DASH NUMBER AND REVISION LETTER) MANUFACTURER'S NAME AND/OR SYMBOL, LOT CODE, DATE OF MANUFACTURE AND SERIAL NUMBER.
2. ACCEPTANCE AND INSPECTION:
  - A. MECHANICAL REQUIREMENTS: DIMENSIONS AND TOLERANCES PER FIGURE 1, FIGURE 2, AND TABLE 1.
  - B. ELECTRICAL REQUIREMENTS: INSULATION RESISTANCE PER MIL-STD-202, METHOD 302.
3. DESIGN:
  - A. FRAME MATERIAL: DIALLYLPHTHALATE PER MIL-M-14, TYPE SDG.
  - B. FRAME INSULATION RESISTANCE: 10K MEGOHMS AT 100 VDC PER MIL-STD-202, METHOD 302, LEAD TO ADJACENT LEAD.
  - C. CONTACT LEAD: MOLDED IN WIRE LEADS OF COMMERCIAL PURE, WELDABLE GRADE A NICKEL PER MIL-STD-1276, TYPE N-1.
  - D. LEAD WORKMANSHIP: THE LEADS SHALL BE UNIFORM IN QUALITY AND TEMPER, CLEAN, SOUND, SMOOTH AND FREE FROM INJURIOUS MATERIAL, SCRAPES, LAPS, CRACKS, TWISTS, TOOL MARKS, SCALE, DAMAGED ENDS, WELD SCORED, PITS, GALLS, AND OTHER DEFECTS WHICH ARE NOT IN ACCORDANCE WITH THE BEST PRACTICES FOR HIGH QUALITY MATERIALS.
  - E. LEAD FATIGUE: LEADS SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING TEST: THE UNIT SHALL BE HELD IN A VERTICAL POSITION WITH A 2 OUNCE WEIGHT SUSPENDED FROM THE LEAD TO BE TESTED. TWO CYCLES OF BENDING SHALL BE PERFORMED. A CYCLE CONSISTING OF MOVING THE BODY OF THE UNIT, 45 DEGREES FROM THE VERTICAL IN ONE DIRECTION, AND BACK 45 DEGREES TO THE ORIGINAL POSITION. NO MECHANICAL DAMAGE SHALL BE EVIDENCED AFTER THE TEST.
  - F. LEAD TENSION: EACH LEAD SHALL BE CAPABLE OF WITHSTANDING AN AXIAL PULL OF 1 POUND FOR A PERIOD OF 30 SECONDS. NO MECHANICAL DAMAGE SHALL BE EVIDENCED AFTER THE TEST.
  - G. FRAME WORKMANSHIP: THE FRAME SHALL BE FREE OF MOLD FLASH.

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	A	REPLACES REVISION (-) WITH CHANGE PFR TDRR 38037	25 FEB 70

TABLE 1								
DASH NO.	A ±.010	B ±.010	C ±.010	FLATPACK SIZE	NO. OF LEADS	D		FIGURE NO.
-1	.450	.325	.050	1/8 x 1/4	10	.135	.155	1
-2	.500	.475	.075	1/4 x 1/4	10	.270	.300	1
-3	.450	.325	.050	1/8 x 1/4	14	.135	.155	1
-4	.500	.475	.075	1/4 x 1/4	14	.270	.300	1
-5	.500	—	.075	1/4 x 1/4	14	.280	.290	2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
2 PLACE DECIMALS	3 PLACE DECIMALS	ANGLES	DRAWN S. TARFICAS	DATE 17 OCT 67	FRAME, MOUNTING, FLATPACK	
+	+	+	CHECKED A.W. MORRISON	DATE 15 NOV 67		
-	-	-	G.E. IVES	DATE 25 OCT 67		
DO NOT SCALE THIS DRAWING			CONTRACT		SPECIFICATION CONTROL DRAWING	
MATERIAL		5 JUN 68	NASA APPROVAL A.C. METZGER			
APPROVAL		MIT APPROVAL E. AUSTIN	SCALE			
			SIZE C	CODE IDENT NO. 80230	1005020	
				SHEET 1 OF 3		

4

3

2

1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY DISCLAIMS RESPONSIBILITY FOR ANY DATA OR INFORMATION FURNISHED, OR IN ANY WAY SUPPLIED, THE USE OF WHICH, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
		ORIGINATED PER TDRR 36295			25 FEB 73	
A		REVISED PER TDRR 38037	JJ			

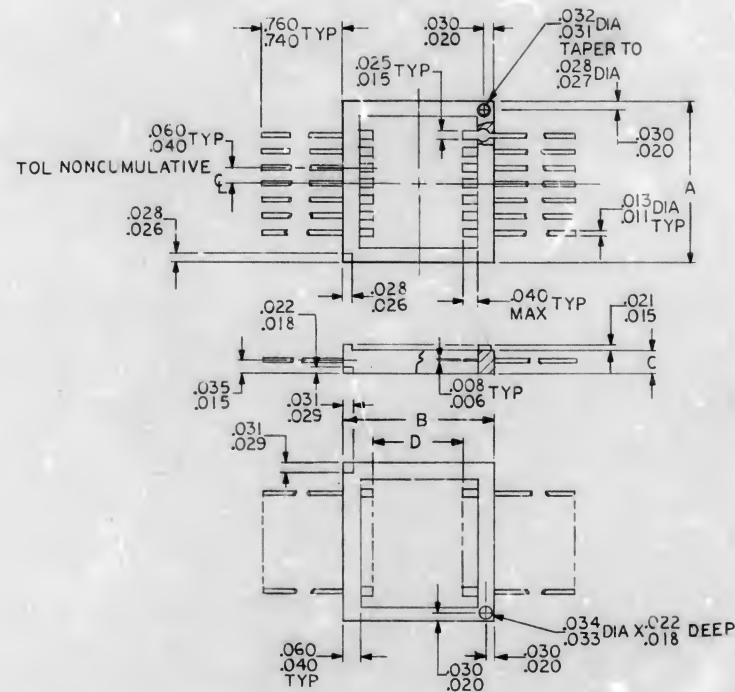


FIGURE 1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS    DECIMALS    ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE NOTE
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>[Signature]</i> 12 OCT 69		FRAME, MOUNTING, FLAT PACK		
CHECKED <i>[Signature]</i> 17 OCT 67				
APPROVED <i>[Signature]</i> 25 OCT 67				
APPROVED <i>[Signature]</i> 25 OCT 67		SPECIFICATION CONTROL DRAWING		
APPROVED <i>[Signature]</i>		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>[Signature]</i> MSC		80230	C	1005020
DATE		SCALE	SHEET 2 OF 3	

4

3

2


1

1005020

B

A

**NOTICE - WHEN GOVERNMENT DRAWS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE-RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR USED SUCH DATA DOES NOT IMPLY ANY WARRANTY, ENDORSEMENT OR RECOMMENDATION. IT IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENT OR PROPRIETARY INFORMATION.**

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	THIS SHEET ADDED PER TORR 33037	25 FEB 79	JJJ 

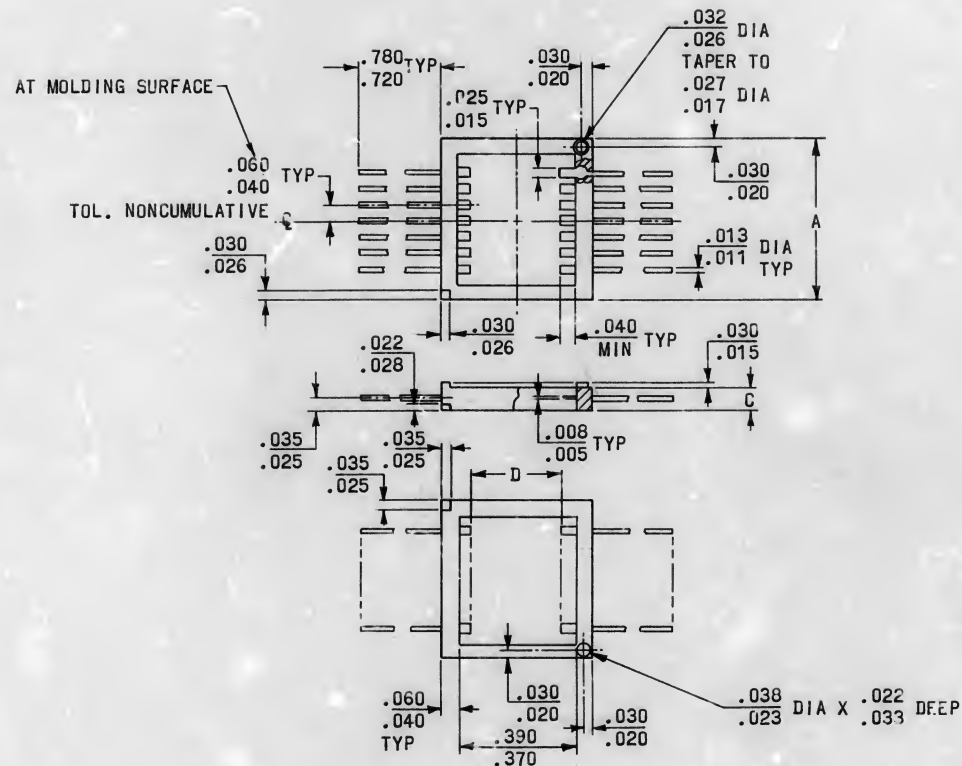


FIGURE 2

**THIS SHEET ADDED**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
2 PLACE 3 PLACE DECIMALS DECIMALS ANGLES + + + - - -		DRAWN <i>J. Jannowitz</i> 25 FEB 70 DATE CHECKED <i>STELMA</i> 26 FEB 70 APPROVAL _____		FRAME, MOUNTING, FLTPACK	
DO NOT SCALE THIS DRAWING		CONTRACT		SPECIFICATION CONTROL DRAWING	
MATERIAL SEE NOTES		NASA APPROVAL _____		SIZE C	CODE IDENT NO. 80230
APPROVAL _____		MIT APPROVAL _____		1005020	
				SCALE	SHEET 3 OF 3

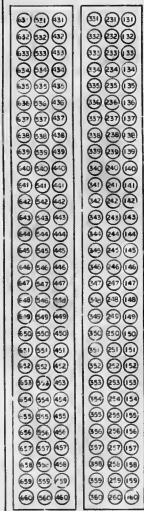


REVISIONS TDRR 35063

•

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		FRACTIONS      DECIMALS      ANG
		±      ±      ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		



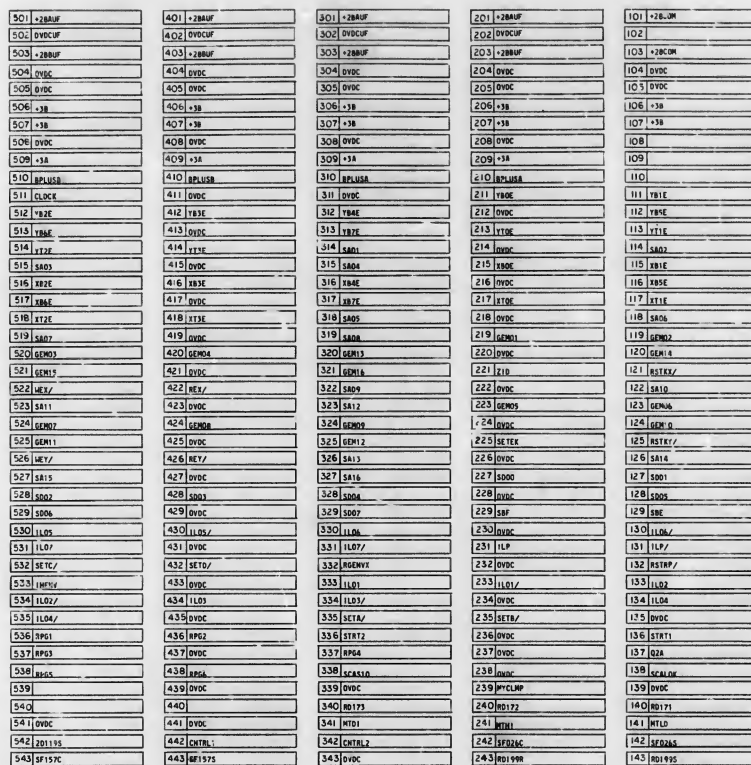


## NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. THE SHIELDS OF CABLE GROUP 111 (PIN 609), ALL G/M Y CIRCUITS (PIN 215), G/M O INPUTS (PIN 355) AND PIN 425 ARE CONNECTED TO OVOC.
3. THE RETURNS OF CABLE GROUP 111 WILL BE TIED TO PIN 209.
4. THE RETURNS OF CABLE GROUP 11 GOING TO MAIN OXSY WILL BE TIED TO PIN 415.
5. THE RETURNS OF CABLE GROUP 11 GOING TO MAIN OXSY WILL BE TIED TO PIN 315.
6. THE SIGNALS ARE "REFERENCE ONLY" AND ARE NOT TO BE TESTED.

[illegible]



[illegible]

THIS DRAWING IS THE PROPERTY OF NASA. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM NASA.

REVISED AND UPGRADED TO CLASS A PER TDRA 1277P

IN BITS			OUT BITS		
IN BIT	NAME	INTERFACE SIGNAL	OUT BIT	NAME	INTERFACE SIGNAL
IN0-1	KEY CODE 1 (KEYRUPT)	KE201	OUT0-1	RLYBIT 1	TE214
IN0-2	KEY CODE 2 (KEYRUPT)	KE202	OUT0-2	RLYBIT 2	TE215
IN0-3	KEY CODE 3 (KEYRUPT)	KE203	OUT0-3	RLYBIT 3	TE216
IN0-4	KEY CODE 4 (KEYRUPT)	KE204	OUT0-4	RLYBIT 4	TE217
IN0-5	KEY CODE 5 (KEYRUPT)	KE205	OUT0-5	RLYBIT 5	TE218
IN0-6	BLOCK UPLNK	SD246	OUT0-6	RLYBIT 6	TE219
IN0-7	INHIBIT UPSYNC		OUT0-7	RLYBIT 7	TE220
IN0-8	SPARE		OUT0-8	RLYBIT 8	TE221
IN0-9	SPARE		OUT0-9	RLYBIT 9	TE222
IN0-10	SPARE		OUT0-10	RLYBIT 10	TE223
IN0-11	G/N ATT. CONTROL MODE	YE092 NC	OUT0-11	RLYBIT 11	TE224
IN0-12	G/N Δ V MODE	YE112 NC	OUT0-12	RLYMD 1	TE225
IN0-13	G/N ENTRY MODE	OE058	OUT0-13	RLYMD 2	TE226
IN0-14	SPARE	YE035 NC	OUT0-14	RLYMD 3	TE227
IN0-15	MARK (KEYRUPT)	KE102	OUT0-15	RLYMD 4	TE228

SEE NOTE 1

IN1	COUNTER (24 HR)		OUT1-1	PROGRAM ALARM	T-229
			OUT1-2	COMP. ACTIVITY	T-230
			OUT1-3	KEY RLSE	T-236
			OUT1-4	TEL. ALARM	T-231
			OUT1-5	PRGM CHECK FALL	T-232
			OUT1-6	SPARE	
			OUT1-7	RUPT TRAP RESET (RUPT 2)	
			OUT1-8	SPARE	
			OUT1-9	I/O WORD	
			OUT1-10	BLOCK ENDPULSE	
			OUT1-11	SPARE	
			OUT1-12	SPARE	
			OUT1-13	ENGINE ON	
			OUT1-14	SPARE	
			OUT1-15	SPARE	

SEE NOTE 1

IN2-1	1600PPS		OUT2-1	RADAR C	
IN2-2	800PPS		OUT2-2	RADAR B	
IN2-3	400PPS		OUT2-3	RADAR A	
IN2-4	200PPS		OUT2-4	THRU1	
IN2-5	LIFT OFF	OE007	OUT2-5	OPT Y	
IN2-6	GUIO. RELEASE	OE048	OUT2-6	OPT X	
IN2-7	SATURN ULLAGE	OE004	OUT2-7	+	
IN2-8	S IV B SEPARATE	OE066	OUT2-8	-	
IN2-9	SHVCH SEPARATE	OE067	OUT2-9	Z	
IN2-10	COU FAIL	YE124	OUT2-10	V	
IN2-11	PIPA FAIL	YE138	OUT2-11	X	
IN2-12	IMU FAIL	YE141	OUT2-12	GYRO	
IN2-13	SCS Δ V MODE	OE045	OUT2-13	CDU	
IN2-14	G/N MONITOR MODE	OE065	OUT2-14	+	
IN2-15	PARITY		OUT2-15	-	

SEE NOTE 1

SEE NOTE 1

OUT2-1	RADAR C
OUT2-2	RADAR B
OUT2-3	RADAR A
OUT2-4	THRU1
OUT2-5	OPT Y
OUT2-6	OPT X
OUT2-7	+
OUT2-8	-
OUT2-9	Z
OUT2-10	V
OUT2-11	X
OUT2-12	GYRO
OUT2-13	CDU
OUT2-14	+
OUT2-15	-

OUTCR 3

OUTCR 2

OUTCR 1

OUT3 SPARE (INPUT OR OUTPUT)

OUT4-1	
OUT4-2	
OUT4-3	
OUT4-4	
OUT4-5	
OUT4-6	

16 BITS FOR ODM LNK DATA

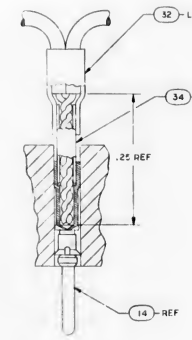
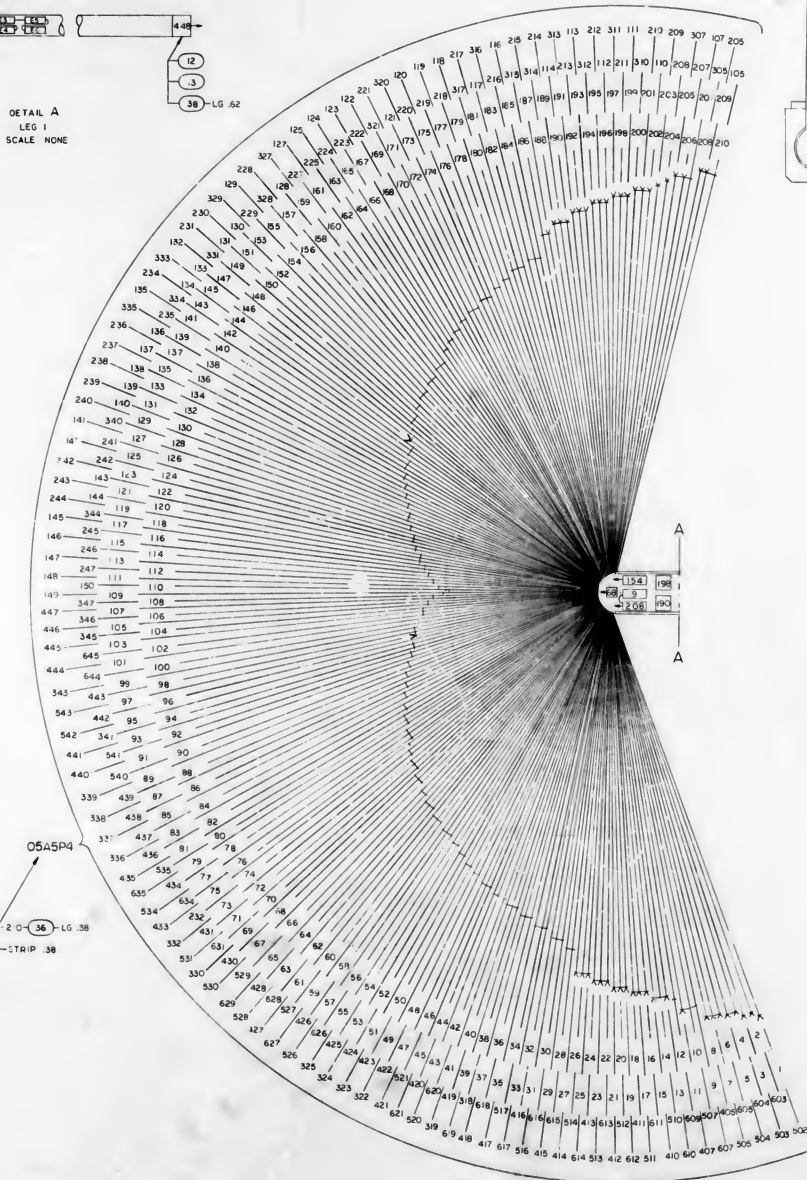
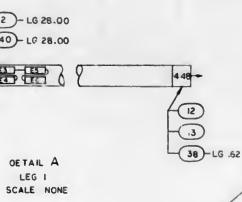
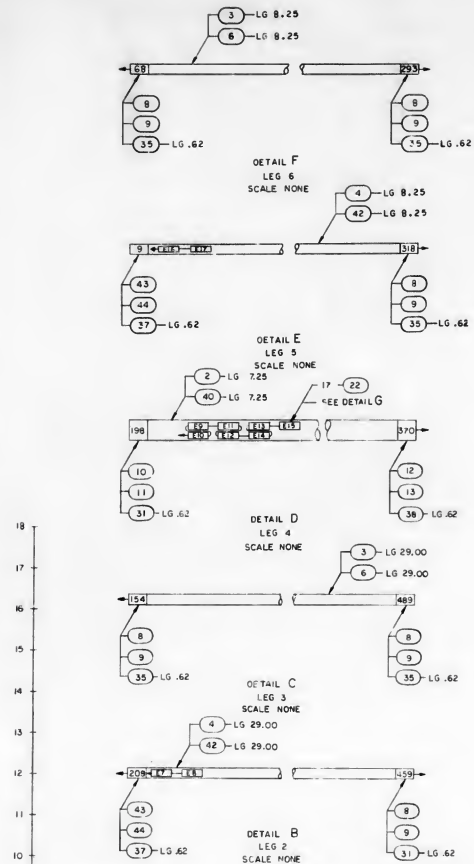
NOTE:  
1. NC SIGNIFIES THAT THE SIGNALS ARE NOT WIRED TO CONNECTORS DSAS93 AND DSAS91

MASTER

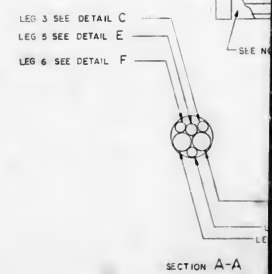
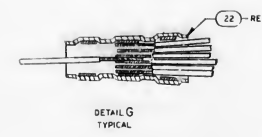
QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FOUND NO.
LIST OF MATERIALS			
M I T		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
INSTRUMENTATION LAB		DATE <i>12/1/68</i>	
DRAWN <i>Hansen</i>		CHECKED <i>W. J. ...</i>	
APPROVAL <i>W. J. ...</i>		APPROVAL <i>W. J. ...</i>	
NASA APPROVAL <i>W. J. ...</i>		CODE IDENT NO. <b>D</b>	
MIT APPROVAL <i>W. J. ...</i>		SCALE <b>1</b> WT <b>1</b> SHEET <b>1</b> OF <b>1</b>	

1005706 A



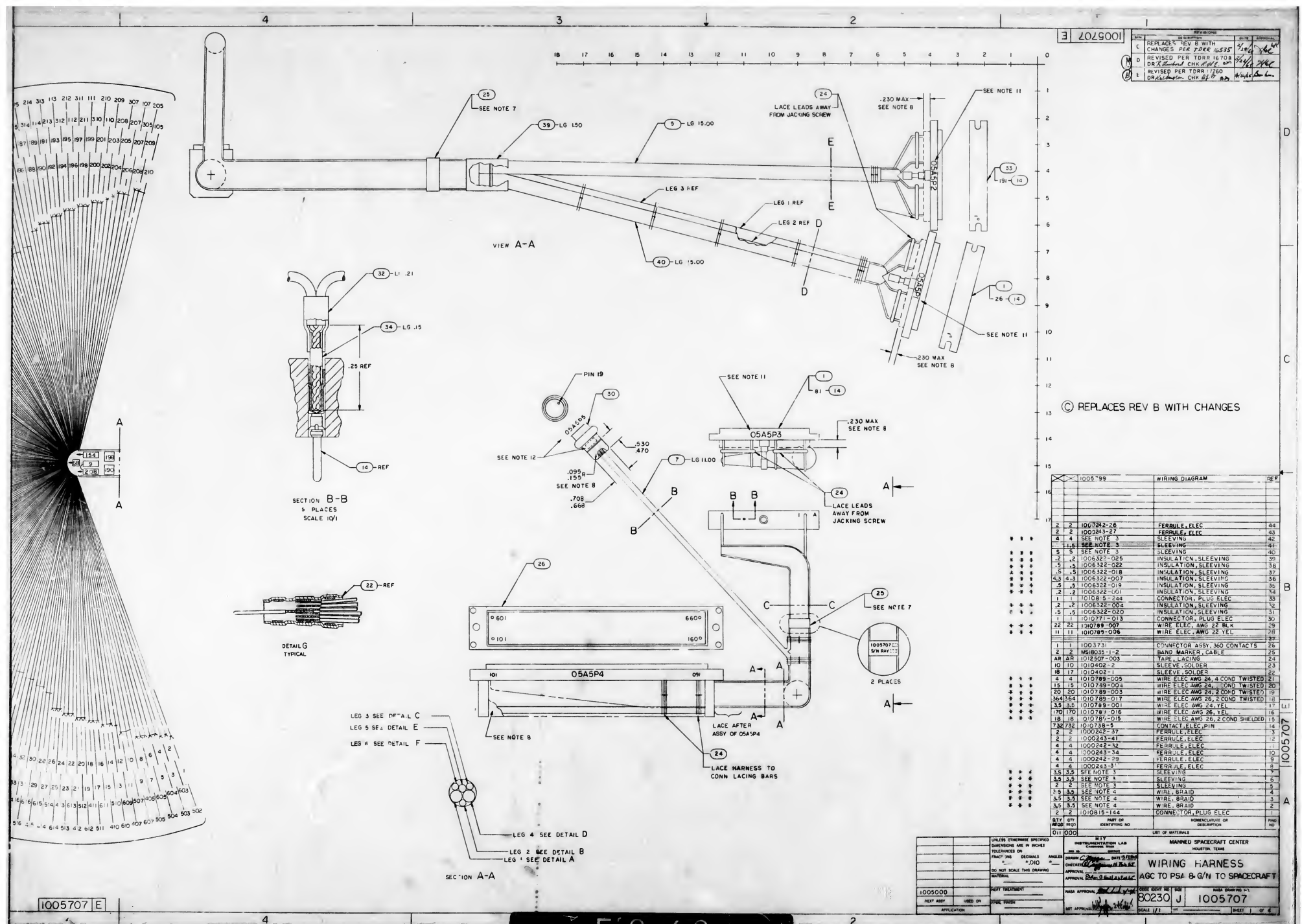


SECTION B-B  
5 PLACES  
SCALE 10/1



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. FOR FABRICATION SEE NO 1002032
  3. MIL-I-631 TYPE F, FORM U<sub>2</sub>, GRADE A, CLASS I, CATEGORY 1, FOR FINE NO.5 AWG 5/8, FOR FINE NO.4 AWG 3/4, FOR FINE NO.3 AWG 1/2, FOR FINE NO.2 AWG 7/16, FOR FINE NO.1 AWG 1/4
  4. QG-B-575 FOR FINE NO.2 BRAID SIZE 1/2, AWG 34, FOR FINE NO.3 BRAID SIZE 1/4, AWG 36, FOR FINE NO.4 BRAID SIZE 3/8, AWG 34
  5. \* \* \* DENOTES LENGTH IN FEET
  6. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH NO 1002206
  7. MARK 100/000 HIGH PER NO 1002019 AND NO 1002122 TYPE II CLASS 1, USING BLACK MARKING INK 1006271-II AND SERIALIZE PER NO 1002023
  8. ENCAPSULATE INDICATED APAs PER NO 1002009 METHOD E, MOUNTING SURFACES OF CONNECTORS MUST NOT BE ENCAPSULATED
  9. TEST PER FTM 100570\*
  10. SOLDER PER NO 1002071, EXCEPT AS SHOWN
  11. MARK 200/180 HIGH PER NO 1002019 AND NO 1002122 TYPE II CLASS 1, USING BLACK MARKING INK 1006271-II, CENTRALIZE AS SHOWN
  12. MARK 070/150 HIGH PER NO 1002019 AND NO 1002122 TYPE II CLASS 2, USING BLACK MARKING INK 1006271-II, CENTRALIZE AS SHOWN
  13. SEE INTERNAL CONNECTION CHART
  14. \* \* \* ATTACH FINE NO.29
  15. \* DENOTES TWO CONNECTIONS TO ONE PIN
  16. \* \* \* DENOTES TWO CONNECTIONS TO ONE PIN, SEE SECTION B-B
  17. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR COMPLETE DESIGNATIONS
  18. PREFIX P' NOS. IN RUN CHART WITH 05A5
  19. NUMBERS PRECEDING BALLOONS DENOTES QUANTITIES



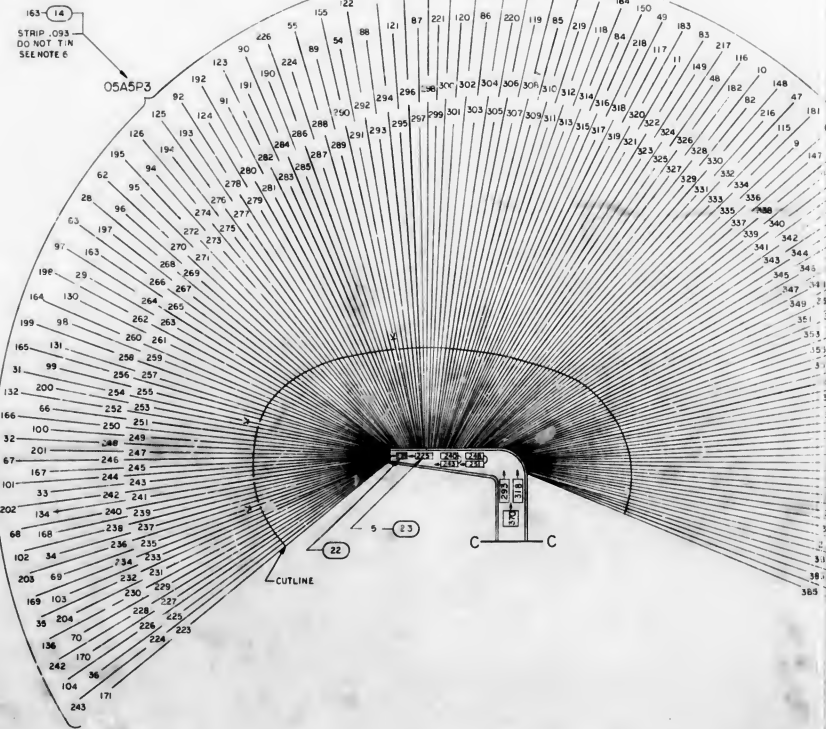
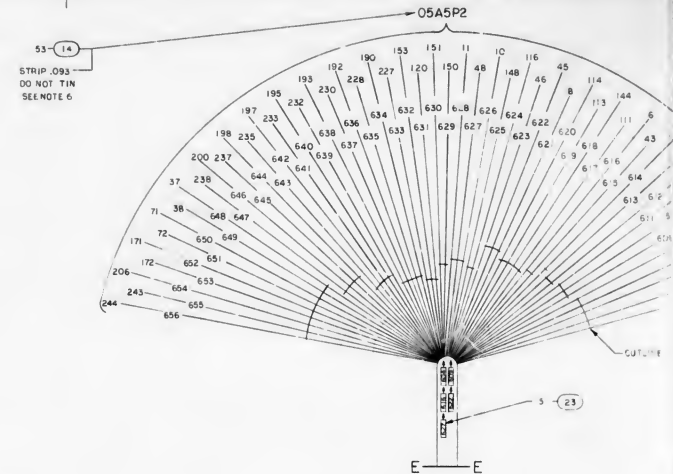
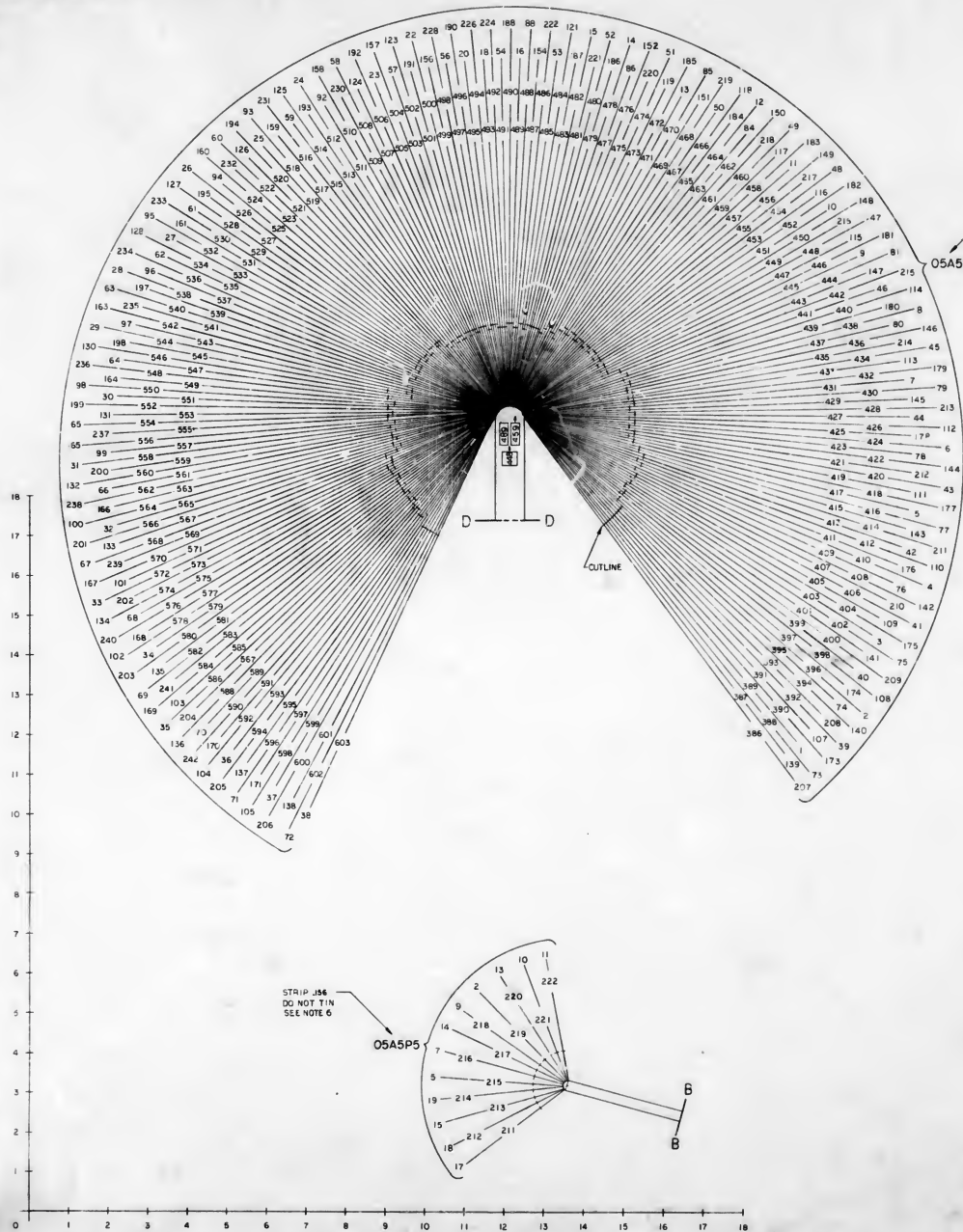


D

C

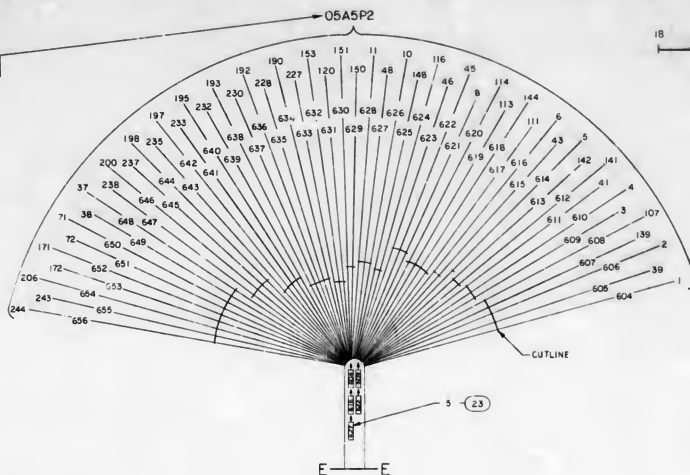
B

A



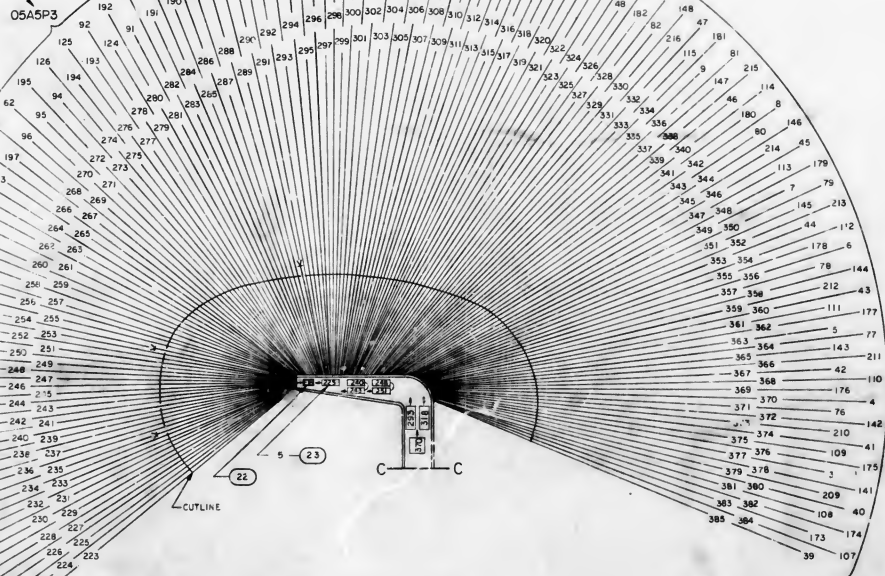


53-14  
STRIP .093  
DO NOT T.IN  
SEE NOTE 6



INTERNAL CONNECTION CHART				
REMARKS	F.R.M.	FIND NO.	LENGTH	TO
	9 ***	29	3	204 ***
	E6	16	3	E5
	E5	16	2	E4
	E4	16	2	E3
	E3	16	2	E2
	E2	16	3	E1
	E1	16	2	E0
	E0	16	2	E-1
	E-1	16	2	E-2
	E-2	16	2	E-3
	E-3	16	2	E-4
	E-4	16	2	E-5
	E-5	16	2	E-6
	E-6	16	2	E-7
	E-7	16	2	E-8
	E-8	16	2	E-9
	E-9	16	2	E-10
	E-10	16	2	E-11
	E-11	16	2	E-12
	E-12	16	2	E-13
	E-13	16	2	E-14
	E-14	16	2	E-15
	E-15	16	2	E-16
	E-16	16	2	E-17
	E-17	16	2	E-18
	E-18	16	2	E-19
	E-19	16	2	E-20
	E-20	16	2	E-21
	E-21	16	2	E-22
	E-22	16	2	E-23
	E-23	16	2	E-24
	E-24	16	2	E-25
	E-25	16	2	E-26
	E-26	16	2	E-27
	E-27	16	2	E-28
	E-28	16	2	E-29
	E-29	16	2	E-30
	E-30	16	2	E-31
	E-31	16	2	E-32
	E-32	16	2	E-33
	E-33	16	2	E-34
	E-34	16	2	E-35
	E-35	16	2	E-36
	E-36	16	2	E-37
	E-37	16	2	E-38
	E-38	16	2	E-39
	E-39	16	2	E-40
	E-40	16	2	E-41
	E-41	16	2	E-42
	E-42	16	2	E-43
	E-43	16	2	E-44
	E-44	16	2	E-45
	E-45	16	2	E-46
	E-46	16	2	E-47
	E-47	16	2	E-48
	E-48	16	2	E-49
	E-49	16	2	E-50
	E-50	16	2	E-51
	E-51	16	2	E-52
	E-52	16	2	E-53
	E-53	16	2	E-54
	E-54	16	2	E-55
	E-55	16	2	E-56
	E-56	16	2	E-57
	E-57	16	2	E-58
	E-58	16	2	E-59
	E-59	16	2	E-60
	E-60	16	2	E-61
	E-61	16	2	E-62
	E-62	16	2	E-63
	E-63	16	2	E-64
	E-64	16	2	E-65
	E-65	16	2	E-66
	E-66	16	2	E-67
	E-67	16	2	E-68
	E-68	16	2	E-69
	E-69	16	2	E-70
	E-70	16	2	E-71
	E-71	16	2	E-72
	E-72	16	2	E-73
	E-73	16	2	E-74
	E-74	16	2	E-75
	E-75	16	2	E-76
	E-76	16	2	E-77
	E-77	16	2	E-78
	E-78	16	2	E-79
	E-79	16	2	E-80
	E-80	16	2	E-81
	E-81	16	2	E-82
	E-82	16	2	E-83
	E-83	16	2	E-84
	E-84	16	2	E-85
	E-85	16	2	E-86
	E-86	16	2	E-87
	E-87	16	2	E-88
	E-88	16	2	E-89
	E-89	16	2	E-90
	E-90	16	2	E-91
	E-91	16	2	E-92
	E-92	16	2	E-93
	E-93	16	2	E-94
	E-94	16	2	E-95
	E-95	16	2	E-96
	E-96	16	2	E-97
	E-97	16	2	E-98
	E-98	16	2	E-99
	E-99	16	2	E-100

\*\*\* DENOTES FERRULE





ASSEMBLY INFORMATION CHART										
REMARKS	FROM		DESCRIPTION					TO		REMARKS
	DESTINATION	RUN NO	COLOR	AWG	FINO	NORUN NO	DESTINATION			
P3-4	370	YEL		26	18	198	P4-211			
-2	383	RED					P4-211			
-41	374	YEL				197	P4-211			
-42	367	RED					P4-211			
-75	371	YEL				18	P4-211			
-77	364	RED					P4-211			
-212	359	YEL				199	P4-211			
-213	357	RED					P4-211			
-109	375	YEL				17	P4-511			
-110	368	RED					P4-511			
-182	372	YEL				16	P4-511			
-143	365	RED					P4-511			
-175	376	YEL				201	P4-510			
-176	360	RED					P4-510			
-210	373	YEL				200	P4-510			
-201	366	RED					P4-510			
-78	357	YEL				194	P4-512			
-79	350	RED					P4-512			
-111	361	RED				21	P4-412			
-112	354	RED					P4-412			
-144	358	YEL				20	P4-512			
-145	351	RED					P4-512			
-177	362	YEL				19	P4-612			
-178	355	RED					P4-612			
-6	356	RED				196	P4-112			
-7	349	RED					P4-112			
-43	360	YEL				195	P4-212			
-44	353	YEL					P4-212			
-179	348	YEL				23	P4-511			
-180	341	RED					P4-511			
-214	345	YEL				22	P4-613			
-215	338	RED					P4-613			
-43	346	YEL				193	P4-113			
-46	340	RED					P4-113			
-80	343	YEL				192	P4-213			
-81	336	RED					P4-213			
-113	347	YEL				191	P4-313			
-114	340	RED					P4-313			
-186	344	YEL				24	P4-413			
-147	337	RED					P4-413			
-8	342	YEL				25	P4-614			
-9	335	RED					P4-614			
-148	330	YEL				188	P4-314			
-149	323	RED					P4-314			
-181	334	YEL				27	P4-414			
-182	327	RED					P4-414			
-216	331	YEL				24	P4-514			
-217	324	RED					P4-514			
-47	332	YEL				180	P4-114			
-48	325	RED					P4-114			
-82	329	YEL				28	P4-615			
-83	322	RED					P4-615			
-115	333	YEL				189	P4-214			
-116	326	RED					P4-214			
-118	313	RED					P4-214			
-150	316	RED				9	P4-415			
-151	310	YEL				70	P4-517			
-183	320	YEL				7	P4-505			
-184	314	RED					P4-505			
-218	317	YEL				6	P4-605			
-219	311	RED				18	P4-517			
-10	328	YEL				216	P4-207			
-11	321	YEL		25	16	204	P4-208			
P3-187	296	SHLD								
P3-49	318	YEL		26	18	9	P4-607			
-200	312	RED					P4-607			
-51	306	RED				10	P4-507			
-52	300	RED					P4-507			
-182	303	YEL				11	P4-407			
-189	302	RED					P4-407			
-220	302	YEL				205	P4-507			
-241	289	YEL					P4-507			
-242	315	YEL				209	P4-215			
-25	309	RED					P4-215			
-112	310	YEL				208	P4-305			
-118	313	RED					P4-305			
-150	316	RED				9	P4-415			
-151	310	YEL				70	P4-517			
-183	320	YEL				7	P4-505			
-184	314	RED					P4-505			
-218	317	YEL				6	P4-605			
-219	311	RED				18	P4-517			
-10	328	YEL				216	P4-207			
-11	321	YEL		25	16	204	P4-208			
P3-187	296	SHLD								
P3-88	293	YEL		26	18	68	P4-430			
-56	291	RED				57	P4-526			
-58	293	YEL				10	P4-527			
-55	288	RED				56	P4-626			
-87	297	YEL				16	P4-428			
-119	300	YEL				64	P4-527			
-120	301	YEL					P4-527			
-121	295	YEL				63	P4-591			
-122	292	YEL				58	P4-629			
-152	304	YEL				72	P4-431			
-153	298	YEL				66	P4-529			
-154	294	YEL				57	P4-527			
-159	290	YEL		25	16	58	P4-426			
-155	289	SHLD				61	P4-427			
P3-89	289	SHLD					P4-433			

ASSEMBLY INFORMATION CHART										
REMARKS	FROM			DESCRIPTION				TO		REMARKS
	DESTINATION	RUN NO.	COLOR	AWG	FIN	Q/RUN NO.	DESTINATION			
	PI-27	448	VEL	26	18	190	P4-114			
	-48	454	RED							
	-115	447	VEL			188	P4-214			
	-116	455	RED				E1			
	-148	450	VEL			188	P4-214			
	-149	456	RED				F1			
	-181	446	VEL			27	P1-414			
	-182	452	RED				E1			
	-216	449	VEL			25	P4-314			
	-217	458	RED				E1			
	-45	454	VEL			193	P4-113			
	-46	441	RED				E1			
	-70	457	RED			192	P4-213			
	-81	444	RED				E2			
	-113	433	VEL			11	P4-313			
	-14	440	RED				E2			
	-8	438	VEL			25	P4-614			
	-8	445	RED				E1			
	-6	436	RED			195	P4-212			
	-7	431	RED				E3			
	-146	436	VEL			24	P4-413			
	-147	443	RED				E1			
	-179	452	VEL			23	P4-513			
	-180	439	RED				E3			
	-210	455	RED			22	P4-613			
	-215	442	RED				E3			
	-23	420	RED			195	P4-212			
	-24	457	RED				E4			
	-78	423	VEL			194	P4-312		LEG 1	
	-79	430	RED				E4			
	-111	419	RED			21	P4-412			
	-112	426	RED				E4			
	-143	422	RED			20	P4-512			
	-145	420	RED				E4			
	-4	410	VEL			138	P4-211			
	-5	417	RED				E5			
	-41	406	VEL			197	P4-311			
	-42	413	RED				E5			
	-177	418	RED			19	P4-612			
	-178	425	RED				E5			
	-212	421	RED			199	P4-111			
	-215	428	RED				E5			
	-76	409	VEL			18	P4-411			
	-77	416	RED				E6			
	-109	405	VEL			17	P4-311			
	-110	412	RED				E6			
	-142	418	RED			16	P4-611			
	-145	415	RED				E6			
	-175	404	VEL			201	P4-210			
	-176	411	RED				E6			
	-210	407	VEL		18	200	P4-310			
	-211	414	RED				E6			
	-3	403	VEL		16	13	P4-510			
	-75	402	VEL		16	14	P4-510			
	-141	401	VEL		16	15	P4-410			
	-209	400	RED		26	16	202	P4-110		
••	PI-107	591	SHLD							
	PI-117	459	VEL	26	18	208	P4-305			
	-118	466	RED				E7			
	-150	462	VEL			8	P4-405			
	-151	469	RED				E7			
	-183	458	VEL			7	P4-505			
	-184	465	RED				E7			
	-218	461	RED			6	P4-605			
	-219	468	RED			207	P4-107			
	-24	464	RED				E8			
	-13	471	RED				E8			
	-14	478	VEL			210	P4-105		LEG 2	
	-15	483	VEL				E8			
	-84	463	VEL			209	P4-205			
	-85	470	RED				E8			
	-125	472	RED			11	P4-407			
	-186	479	RED				E8			
	-220	475	VEL		16	205	P4-307			
	-221	481	RED				E8			
	-10	451	VEL		16	208	P4-207			
	-11	455	VEL	26	16	204	P4-208			
••	PI-187	483	SHLD			17	P4-609		••	
	PI-16	493	VEL	26	16	124	P4-228			
	-18	493	RED			191	E9			
	-20	495				149	-231			
	-54	491				145	-331			
	-66	477				153	-339			
	-88	488				149	-530			
	-119	475				156	-389			
••	-119	475				59	-97			
••	-121	484				158	-178			
	-121	484				157	-181		LEG 3	
	-152	476				160	-189			
	-154	487				152	-130			
	-188	492				171	-151			
	-222	486				73	-532			
	-224	492				171	-252			
	-225	494				147	-132			
	PI-228	458	VEL	26	16	146	-135			
			SHLD			145	P4-333		••	

ASSEMBLY INFORMATION CHART										
REMARKS	FROM		DESCRIPTION				TO		REMARKS	
	DESTINATION	RUN NO	COLOR	AWG	END	NORUN	NO DESTINATION			
	PI-235	541	VEL	26	18	82	PI-436			
	PI-236	548	RED			84	PI-437			
	PI-536	54	RED			533	PI-193			
	PA-537	54	RED			540	PI-198			
	PI-163	542	RED			81	PI-435			
	PI-466	549	RED			81	PI-435			
	PA-134	142	VEL			546	PI-150			
	PA-135	138	VEL			533	PI-131			
	PI-87	543	VEL			134	PI-193			
	PI-98	550	RED			132	PA-139			
	PA-234	43	RED			542	PI-193			
	PA-235	40	RED			544	PI-75			
	PI-30	555	VEL			928	PA-34			
	PI-31	553	RED			941	PI-151			
	PA-236	137	VEL			555	PI-239			
	PA-237	135	RED			562	PI-238			
	PI-199	551	RED			138	PI-31			
	PI-200	559	RED			56	PI-137			
	PA-238	133	RED			536	PI-165			
	PA-239	131	RED			51	PI-163			
	PI-132	560	VEL			106	PA-146			
	PI-133	567	RED			108	PA-147			
	PA-246	114	VEL			532	PI-39			
	PA-247	112	RED			544	PI-100			
	PI-66	561	RED			88	PI-438			
	PI-67	568	RED			88	PA-439			
	PA-338	87	VEL			95	PI-37			
	PA-339	89	RED			572	PI-33			
	PI-239	569	VEL			91	PI-460			
	PI-240	576	RED			95	PA-441			
	PA-126	128	RED			566	PI-200			
	PA-141	94	RED			573	PI-202			
	PI-167	570	VEL			129	PA-240			
	PI-168	577	RED			126	PA-241			
	PA-140	30	VEL			974	PI-134			
	PA-141	127	RED			971	PI-135			
	PI-101	571	RED			105	PA-446			
	PI-102	576	RED			107	PA-447			
	PI-241	96	RED			675	PI-69			
	PA-448	98	RED			582	PI-69			
	PA-34	579	VEL			123	PI-342			
	PI-35	546	RED			123	PI-343			
	PA-242	94	VEL			583	PI-241			
	PA-243	121	RED			580	PI-242			
	PI-703	580	RED			125	PI-145			
	PI-204	587	RED			122	PA-143			
	PA-444	101	VEL			584	PI-169			
	PI-145	103	RED			581	PI-170			
	PI-136	588	VEL			104	PA-344			
	PI-137	594	RED			104	PA-345			
	PA-244</									

[illegible]

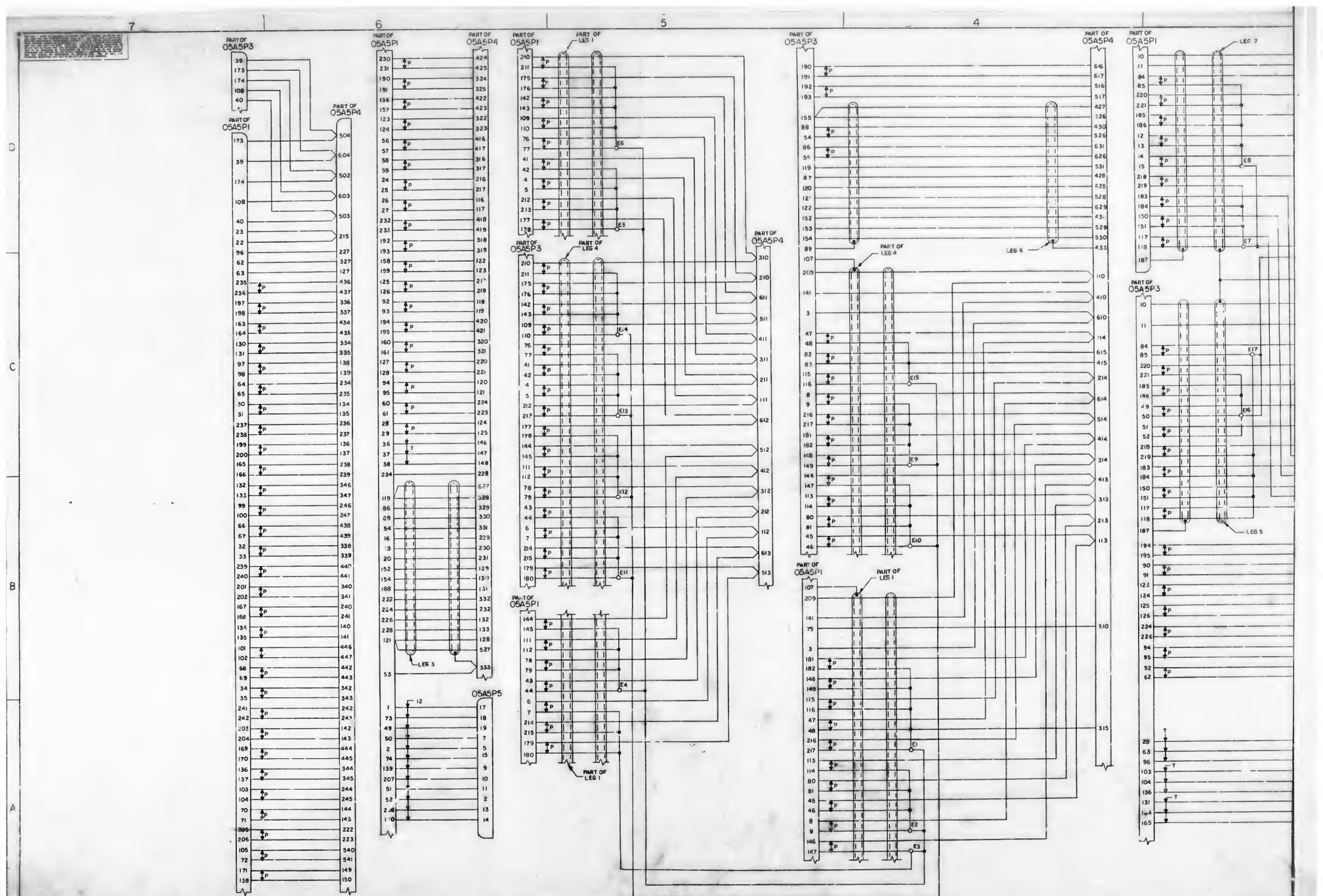
ASSEMBLY INFORMATION CHART										
REMARKS	FROM		DESCRIPTION				TO		REMARKS	
	DESTINATION	RUN NO	COLOR	AWG	FIN	NO	DESTINATION			
	P1-235	541	VEL		26	18	62	P4-435		
	P1-235	540	RED				84	P4-437		
	P4-335	83	VEL				533	P1-197		
	P4-337	85	RED				535	P1-199		
	P1-163	542	VEL				78	P4-434		
	P1-164	549	RED				81	P4-435		
	P4-334	142	VEL				545	P1-150		
	P4-335	138	RED				543	P1-151		
	P1-97	543	VEL				154	P4-138		
	P1-98	530	RED				137	P4-135		
	P4-234	643	VEL				547	P1-64		
	P4-235	640	RED				846	P1-65		
	P1-30	551	VEL				84	P4-134		
	P1-31	548	RED				141	P4-135		
	P4-236	137	VEL				545	P1-237		
	P4-237	135	RED				543	P1-238		
	P1-189	552	VEL				148	P4-136		
	P1-200	559	RED				156	P4-137		
	P4-218	153	VEL				156	P1-165		
	P4-238	131	RED				563	P1-166		
	P1-132	660	VEL				105	P4-346		
	P4-133	565	RED				108	P4-347		
	P4-246	114	VEL				571	P1-99		
	P4-247	112	RED				584	P1-100		
	P1-66	541	VEL				84	P4-438		
	P1-67	568	RED				88	P4-439		
	P4-348	87	VEL				565	P1-37		
	P4-349	89	RED				572	P1-33		
	P1-239	569	VEL				91	P1-40		
	P1-240	576	RED				93	P1-41		
	P4-540	126	VEL				566	P1-20		
	P4-541	94	RED				573	P1-202		
	P1-67	570	VEL				128	P4-203		
	P1-168	577	RED				166	P4-241		
	P4-140	150	VEL				574	P1-134		
	P4-141	127	RED				575	P1-135		
	P1-101	571	VEL				105	P4-446		
	P1-102	578	RED				107	P4-747		
	P4-482	96	VEL				575	P1-69		
	P4-443	98	RED				582	P1-69		
	P1-34	579	VEL				118	P1-342		
	P1-35	586	RED				99	P4-343		
	P4-242	124	VEL				583	P1-241		
	P4-243	121	RED				590	P1-242		
	P1-203	580	VEL				122	P4-142		
	P1-204	587	RED				122	P4-143		
	P4-444	101	VEL				584	P1-168		
	P1-445	103	RED				591	P1-170		
	P1-135	588	VEL				108	P4-344		
	P1-137	592	RED				118	P4-345		
	P4-244	119	VEL				585	P1-103		
	P4-245	116	RED				592	P1-104		
	P1-60	583	VEL				120	P4-144		
	P1-71	596	RED				117	P4-145		
	P4-232	168	VEL				594	P1-205		
	P4-233	166	RED				595	P1-206		
	P1-105	599	VEL				90	P4-540		
	P1-72	602	RED				92	P4-41		
	P4-150	110	RED				587	P1-111		
	P1-28	538	VEL				601	P1-138		
	P1-29	544	RED				165	P4-124		
	P4-224	164	VEL				122	P1-60		
	P4-225	162	RED				125	P1-61		
	P1-94	523	VEL				175	P4-120		
	P1-95	512	RED				172	P4-121		
	P4-220	176	VEL				528	P1-127		
	P4-221	171	RED				184	P1-128		
	P1-60	524	VEL				520	P4-320		
	P1-61	531	RED				523	P1-321		
	P4-620	44	VEL				520	P1-69		
	P4-621	47	RED				527	P1-195		
	P1-92	511	VEL				528	P4-118		
	P1-93	518	RED				517	P4-119		
	P4-218	178	VEL				174	P1-125		
	P4-219	176	RED				173	P1-126		
	P1-158	510	VEL				89	P4-22		
	P1-159	517	RED				167	P4-123		
	P4-318	38	VEL				106	P1-92		
	P4-319	41	RED				513	P1-193		
	P1-232	525	VEL				37	P4-618		
	P1-233	530	RED				40	P4-619		
	P4-116	189	VEL				53	P1-26		
	P4-117	187	RED				526	P1-27		
	P1-24	512	VEL				186	P4-616		
	P1-25	519	RED				181	P4-27		
	P4-366	183	VEL				508	P1-50		
	P4-317	710	RED				515	P1-59		
	P1-51	497	VEL				32	P4-616		
	P1-52	503	RED				35	P4-617		
	P1-22	49	VEL				505	P1-123		
	P1-323	31	RED				507	P1-124		
	P1-53	493	VEL				504	P4-621		
	P1-159	504	RED				50	P4-623		
	P4-324	53	VEL				496	P1-197		
	P4-385	58	RED				501	P1-191		
	P1-230	509	VEL				52	P4-624		
	P1-231	516	RED				54	P4-625		
	P4-620	42	VEL				285	P1-23		
	P4-621	45	RED				279	P3-124		
	P3-125	276	VEL				43	P4-550		
	P3-126	274	RED				46	P4-551		
	P4-524	77	VEL				284	P3-80		
	P4-555	80	RED				281	P3-81		
	P3-194	273	VEL				36	P4-618		
	P3-195	272	RED				39	P4-619		
	P4-516	31	VEL				280	P3-192		
	P4-517	34	RED				283	P3-193		
	P3-190	288	VEL				30	P4-616		

ASSEMBLY INFORMATION CHART											
FROM		DESCRIPTION						TO			
REMARKS	DESTINATION	RUN NO.	COLOR	AWG	FIND	NOR	DESTINATION	REMARKS			
	P4-624	74	RED	26	18	277	P3-94				
	P4-635	74	RED			277	P3-93				
	P3-92	278	VEL			95	P4-242				
	P3-64	278	RED			97	P4-243			*	
	P4-644	100	VEL			281	P3-224				
	P4-645	102	RED			286	P3-226				
	P3-199	234	VEL			65	P2-144				
	P3-200	253	RED			613	P2-142				
	P7-107	608	VEL			250	P3-164				
	P2-120	607	RED			249	P3-165				
	P3-169	239	VEL			618	P2-144				
	P3-169	234	RED			617	P2-111				
	P2-115	615	VEL			247	P3-208				
	P2-114	620	RED			242	P3-202				
	P3-170	227	VEL			624	P2-116				
	P3-171	223	RED			622	P2-148				
	P2-150	629	VEL			236	P3-203				
	P2-151	630	RED			632	P2-154				
	P3-243	224	VEL			632	P2-153				
	P2-242	228	RED	26	18	639	P2-120				
	P3-30	385	VEL	26	16	5	P3-173				
*	P4-604	4	RED			383	P3-174				
	P3-174	358	VEL			1	P4-502				
	P4-603	4	RED			383	P3-175				
	P3-40	380	RED			15	P4-503				
	P4-288	197	RED			536	P1-234				
	P1-62	533	RED			159	P4-347				
	P4-287	160	RED			537	P1-96				
	P4-283	540	RED			161	P4-127				
	P4-215	187	RED			500	P1-232				
	P1-23	508	RED			187	P4-215			*	
*	P4-333	145	RED			485	P1-33				
	P1-40	389	RED			485	P4-303				
	P1-603	2	RED			396	P1-108				
	P1-174	397	RED			444	P4-502				
	P4-604	4	RED			332	P1-109				
	P1-173	390	VEL	26	16	5	P4-504			*	
	P2-172	653	VEL	24	17	258	P3-176				
	P1-114	244	RED	24	19	648	P3-177				
	P3-154	618	VEL	24	19	648	P2-37				
	P2-171	650	VEL	24	19	648	P3-104				
	P3-154	618	VEL	24	19	648	P2-134				
	P3-105	233	VEL	24	20	653	P2-227				
	P3-104	226	RED	24	20	658	P2-128				
	P3-136	250	RED			654	P2-190				
	P2-193	338	VEL			257	P1-131				
	P2-192	536	RED	24	20	260	P3-164				
	P2-230	637	GRN			255	P3-60				
	P3-163	265	VEL			641	P2-233				
	P1-197	267	RED	24	20	638	P2-132				
	P3-198	262	GRN			640	P2-194				
	P2-198	644	VEL			264	P1-37				
	P2-197	672	GRN	24	20	647	P2-95				
	P2-235	643	GRN			261	P3-130				
	P3-95	255	VEL			645	P2-237				
	P3-100	249	RED	24	20	647	P2-238				
	P3-132	252	GRN			646	P2-200				
	P2-25	593	VEL			115	P4-166				
	P1-37	599	RED	24	20	111	P4-167				
	P1-38	603	GRN			111	P4-148				
	P2-206	654	VEL			97	P5-503				
	P2-244	656	RED			268	P1-28			*	
	P2-243	652	GRN	24	21	266	P3-63				
	P2-117	652	GRN			263	P3-34				
	P2-171	604	VEL			25	P3-66				
	P2-39	605	RED	26	15	254	P3-31			*	
	P2-3	608	RED			46	P3-167				
*	P3-32	248	VEL			609	P2-3			*..	
*	P3-51	254	RED	26	19	610	P2-4				
			BLU			611	P2-441				
	P2-6	616	VEL			243	P3-33				
	P2-43	615	RED	26	15	235	P3-69			*..	
	P2-5	616	BLU			237	P3-34				
*	P3-68	240	VEL			622	P2-45			*..	
*	P3-69	235	RED	26	15	623	P2-8				
			BLU			621	P2-8				
	P2-68	627	VEL			225	P3-36				
	P2-10	626	RED	26	15	232	P3-35				
	P2-11	628	BLU			229	P3-70			*..	
	P1-1	389	VEL	22	28	211	P5-17				
	P1-73	388	RED			212	P5-18				
	P1-69	460	RED			213	P5-19				
	P1-50	467	RED			216	P5-5				
	P1-2	396	RED			213	P5-5				
	P1-74	395	RED			213	P5-17				
	P1-59	397	VEL			218	P5-9				
	P1-207	386	RED			221	P5-10				
	P1-51	474	BLP		29	222	P5-1				
	P1-52	480	BLK			219	P5-2				
	P1-208	393	RED			219	P5-1				
	P1-140	394	BLK	22	29	217	P5-15				
TWIST OF WIRES TOGETHER											

© REPLACES REV B WITH CHANGES

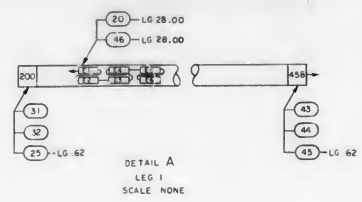
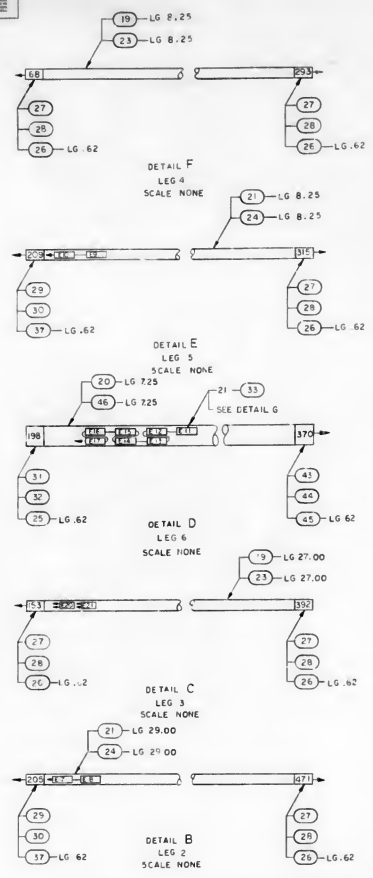
[illegible]



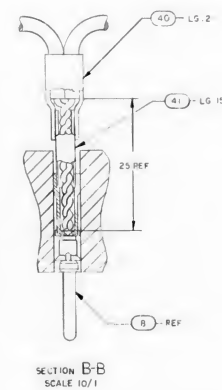
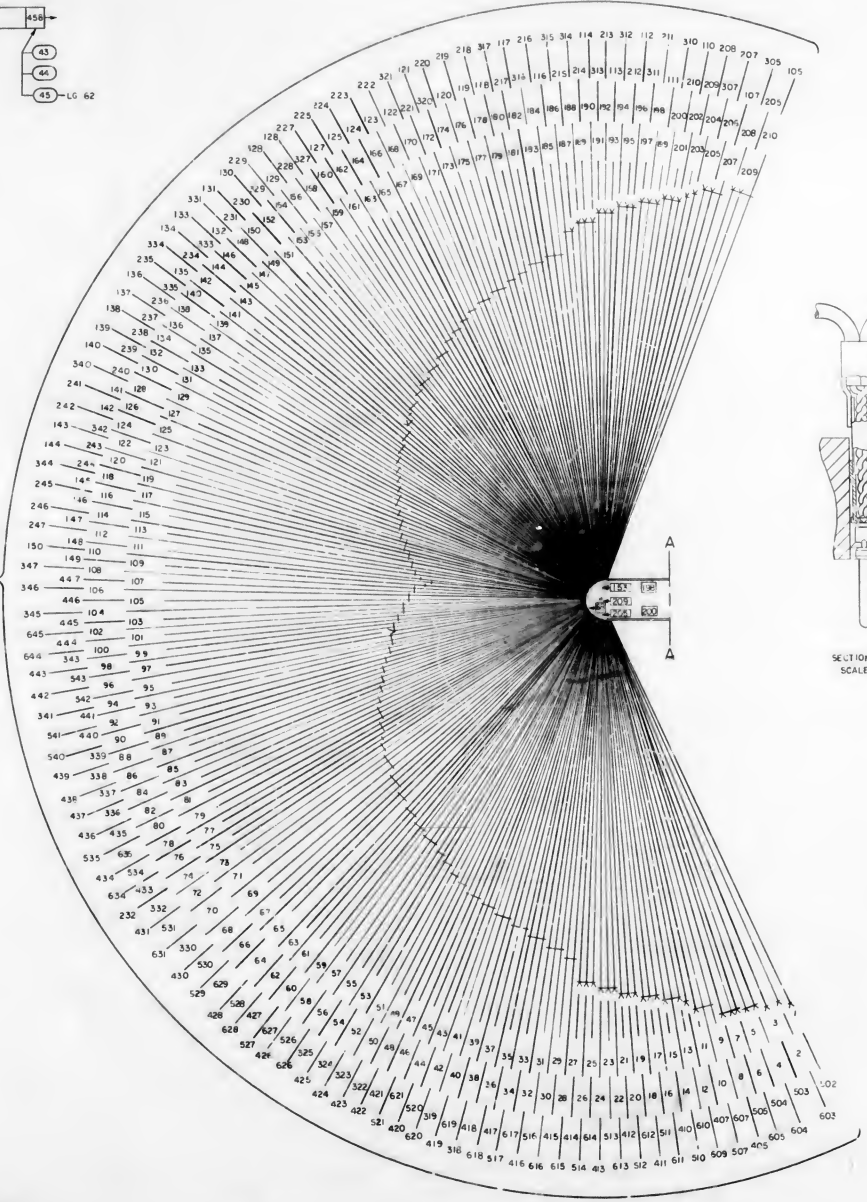






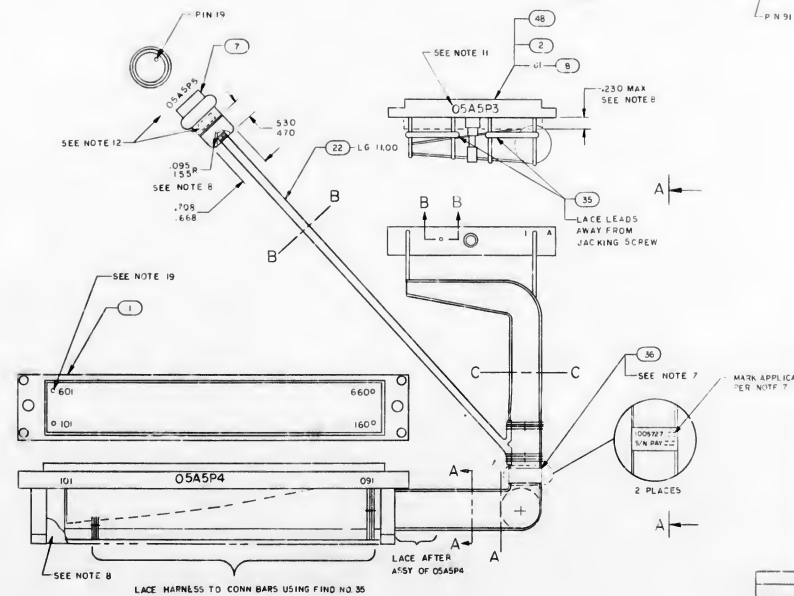
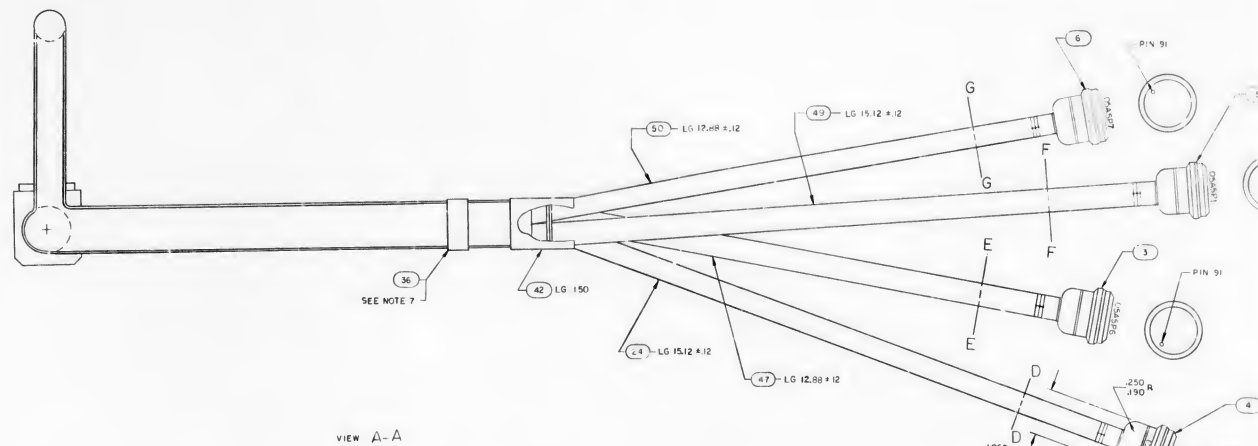
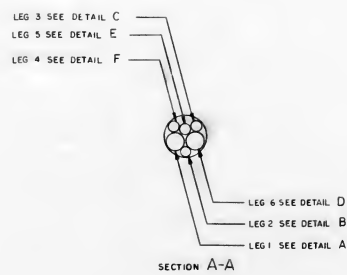
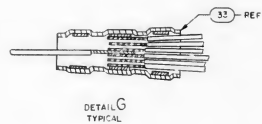
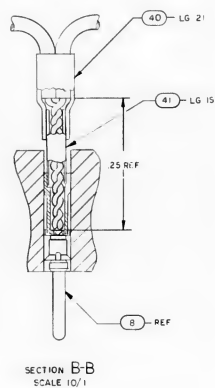
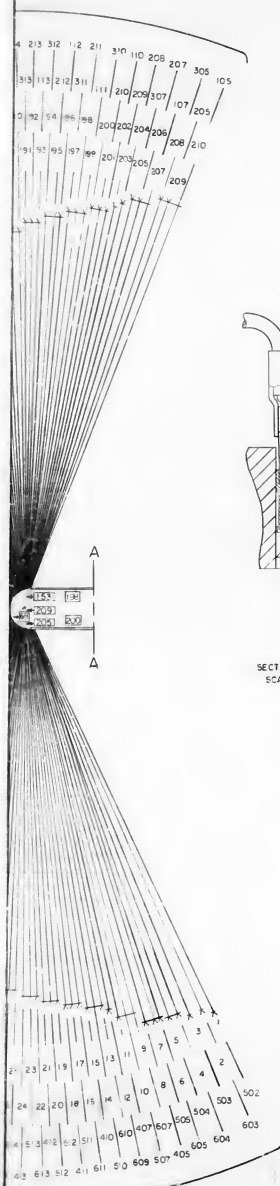


05A5P4  
210-39 LG 38  
5-STRIP 38



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-0-70327
  2. FOR FABRICATION SEE ND1002032
  3. MIL-I-531 TYPE F, FORM U<sub>2</sub>, GRADE A, CLASS I, CATEGORY 1, FOR FIND NO.47 AWG 5/8 FOR FIND NO.46 AWG 7/8, FOR FIND NO.24 AWG 1/2, FOR FIND NO.23 AWG 3/16 FOR FIND NO.22 AWG 2, FOR FIND NO.49 AWG 1/4, FOR FIND NO.50 AWG 3/4
  4. OD-B-575 FOR FIND NO.20 BRAID SIZE 1/2, AWG 34, FOR FIND NO.19 BRAID SIZE 1/4 AWG 36, FOR FIND NO.21 BRAID SIZE 3/8, AWG 34
  5. \* \* \* DENOTES LENGTH IN FEET
  6. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206
  7. MARK .000/.000 HIGH GOTHIC PER N. 0209, USING BLACK MARKING INK 1006271-11 AND SERIALIZE PER ND1002033
  8. ENCAPSULATE INDICATED AREA PER ND1002009 METHOD E WITH PRIMER, MOUNTING SURFACES OF CONNECTORS MUST NOT BE ENCAPSULATED
  9. TEST PER FTM 1005707
  10. SOLDER PER ND1002071, USING SOLDER PER ND1002075 EXCEPT AS SHOWN
  11. MARK 200/180 HIGH PER ND1002019 AND ND1002122 TYPE II CLASS I, USING BLACK MARKING INK 1006271-11, CENTRALIZE AS SHOWN
  12. MARK .070/.050 HIGH PER ND1002019 AND ND1002122 TYPE II CLASS 2, USING BLACK MARKING INK 1006271-11, CENTRALIZE AS SP JVN
  13. \* \* \* SEE INTERNAL CONNECTION CHART
  14. \* \* \* ATTACH FIND NO.18
  15. \* \* \* DENOTES TWO CONNECTIONS TO ONE PIN
  16. \* \* \* DENOTES TWO CONNECTIONS TO ONE PIN SEE SECTION B-B
  17. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATIONS PREFIX P NOS. IN RUN CHART WITH 05A5
  18. NUMBERS PRECEDING BALLOONS DENOTE QUANTITIES
  19. SEAL TERMINALS TO CONNECTOR, PER ND1002004, TYPE VI



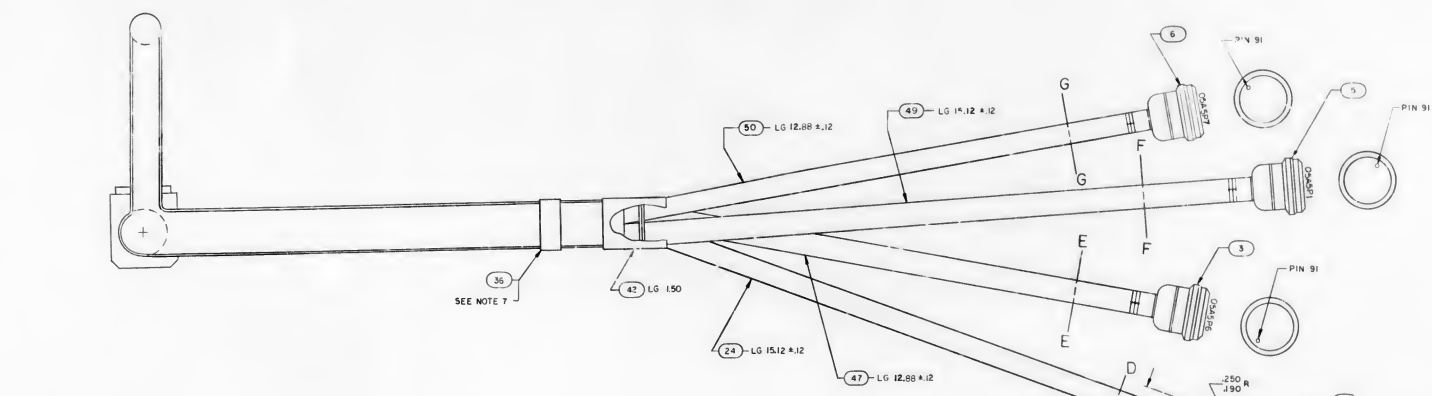




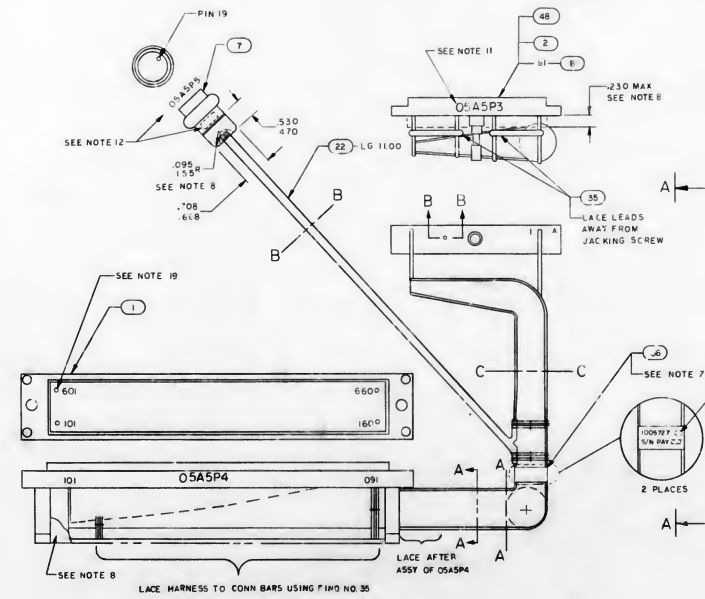
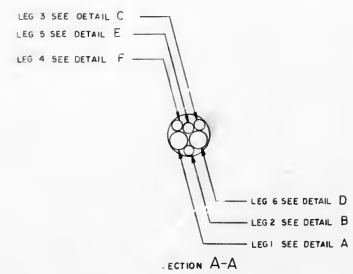
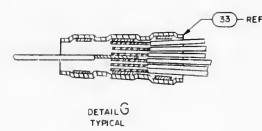
1005727 D

REVISIONS				
REV	DATE	DESCRIPTION	BY	APP'D
B		REPLACES REVA WITH CHANGE PER TORR 18696		
C		REVISED PER TORR 18696		
D		REVISED PER TORR 19757		

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



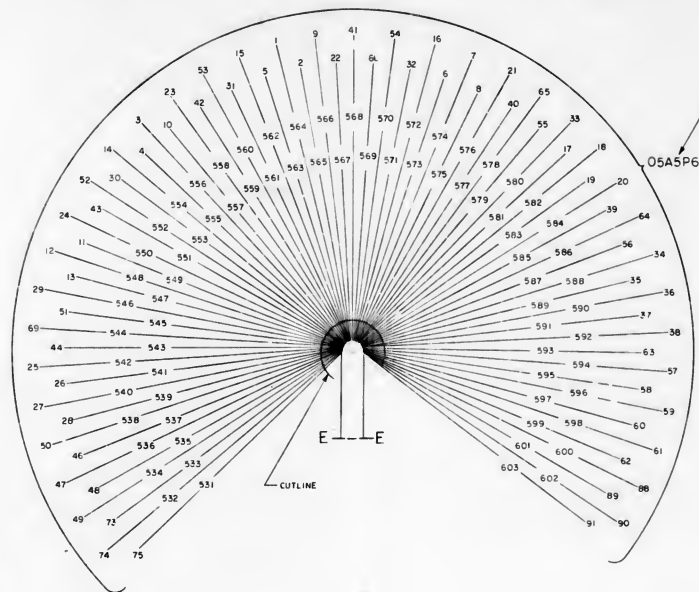
VIEW A-A



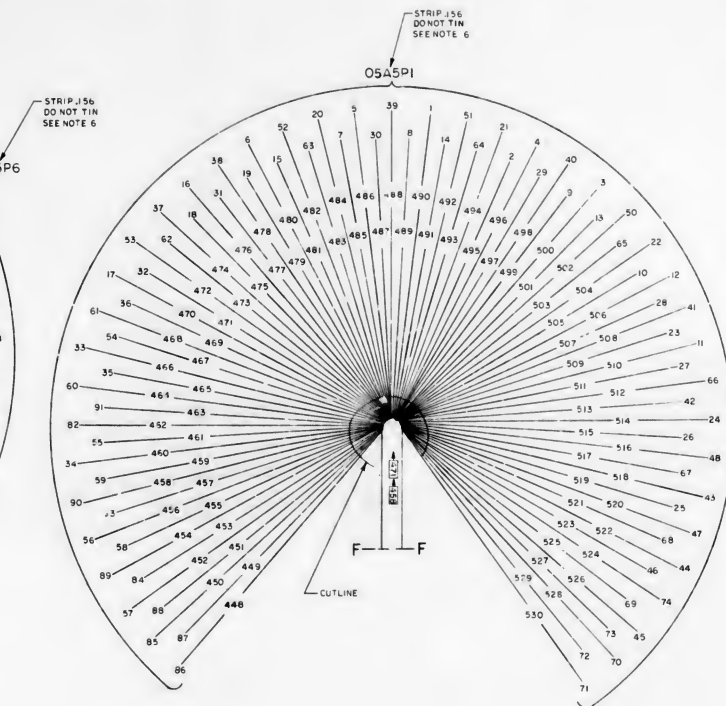
REPLACES REVA WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	LIST OF MATERIALS
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN $\mu$ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMAL ANGLES R/DIO R DO NOT SCALE FOR DRAWING NATURAL			
DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> APPROVED BY <i>[Signature]</i>			
1005000			
NEXT ASSY USED ON			
APPLICATION			
APPROVED BY <i>[Signature]</i> DATE 80270 J		SCALE 1/1	
SHEET 1 OF 4		1005727	

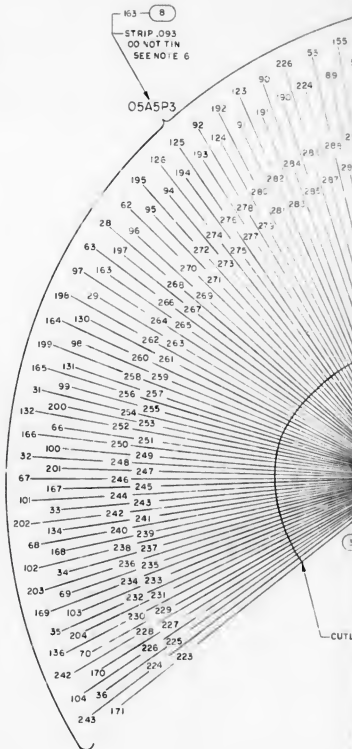
F-3 / 3



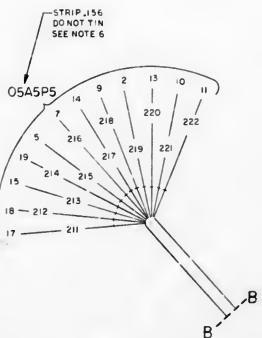
STRIP .156  
DO NOT TIN  
SEE NOTE 6



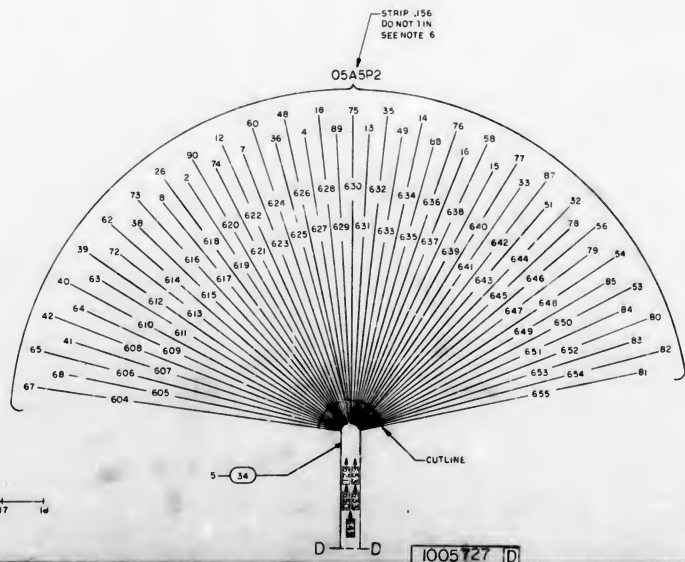
STRIP .156  
DO NOT TIN  
SEE NOTE 6



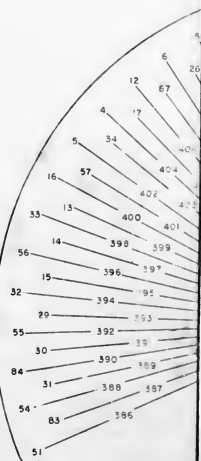
STRIP .093  
DO NOT TIN  
SEE NOTE 6



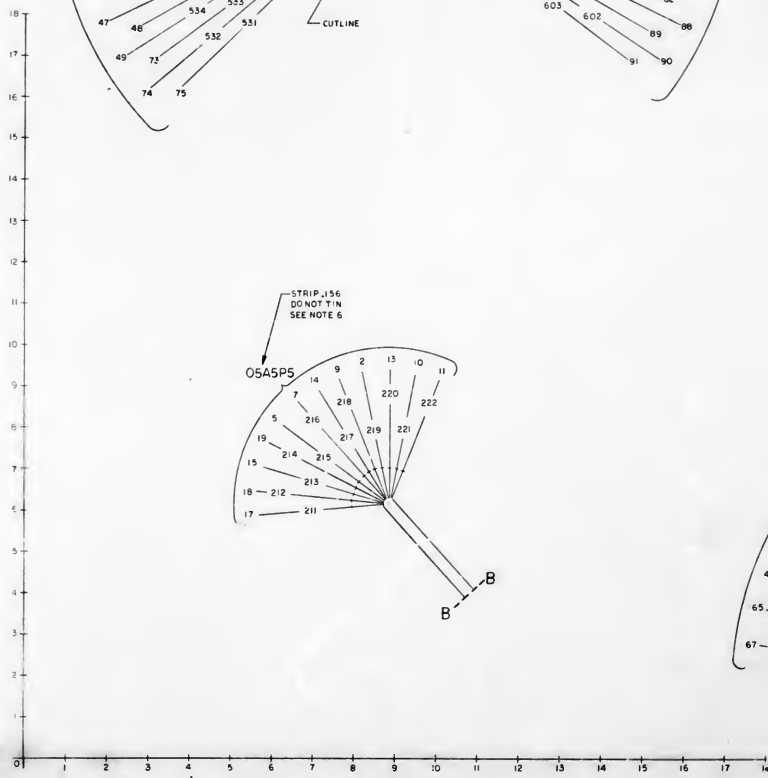
STRIP .156  
DO NOT TIN  
SEE NOTE 6



STRIP .156  
DO NOT TIN  
SEE NOTE 6



STRIP .156  
DO NOT TIN  
SEE NOTE 6



5-34

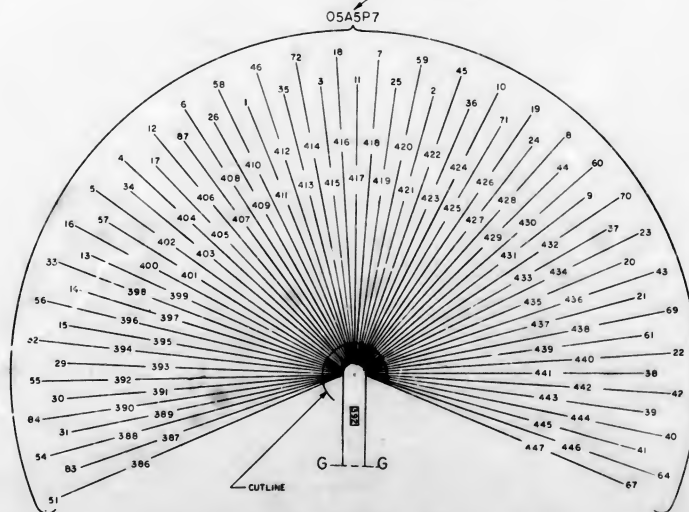
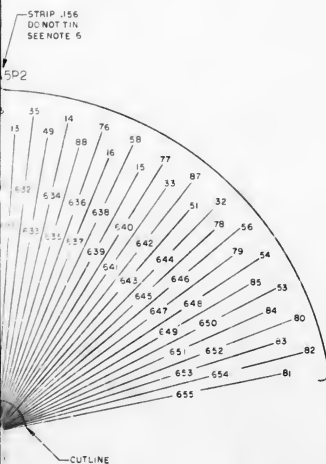
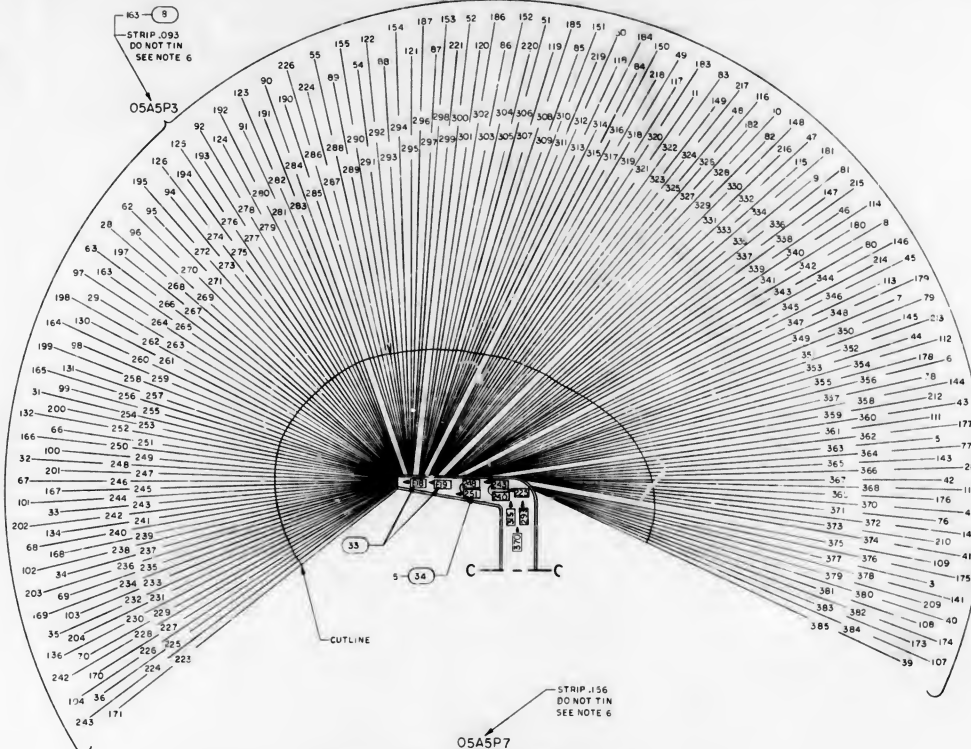
D D

1005727 D

SHEET 2

4





ⓑ REPLACES REV A WITH CHANGE

DATE MO DAY		PART OR IDENTIFYING NO		MATERIAL OR NOTES		NAME OF LAB OR OR DESIGNATION		PRTY NO	
USE OF MATERIALS				USE OF MATERIALS					
(UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES) CORRELATION VALUES ARE IN % OF RECTION VALUES ARE IN CHAINS IN % PLACES ON FRUSTIONS (BENGLAS) ARE IN INCHES DO NOT SCALE THIS DRAWING MATERIAL				MIT INSTRUMENTATION LAB MANIPULATED SPACECRAFT CENTER HOUSTON TEXAS  WIRING HARNESS AGC TO PSA & G/N SPACECRAFT  APPROVED BY: <i>[Signature]</i> DRAWING NO: 80230 J 1005727 APPROVED BY: <i>[Signature]</i> DRAWING NO: 80230 J 1005727 APPROVED BY: <i>[Signature]</i> DRAWING NO: 80230 J 1005727					
NEXT VISIT		USED ON		APPLICATION					



ASSEMBLY INFORMATION CHART										
REMARKS	FROM					TO				
	DESTINATION	RUN NO.	COLOR	ANG.	FWD NO.	RUN NO.	DESTINATION	REMARKS		
P3-5	370	26	9			P4-211	E1			
-212	359	YEL				P4-211	E1			
-213	359	YEL				P4-211	E1			
-177	362	YEL				P4-612	E1			
-178	355	YEL				P4-311	E1			
-41	354	YEL				P4-311	E1			
-42	367	RED				P4-311	E1			
-253	373	YEL				P4-311	E1			
-211	366	RED				P4-311	E1			
-175	376	YEL				P4-210	E1			
-176	365	YEL				P4-210	E1			
-142	372	YEL				P4-611	E1			
-143	362	YEL				P4-511	E1			
-144	357	YEL				P4-511	E1			
-100	368	RED				P4-511	E1			
-76	371	YEL				P4-511	E1			
-77	368	RED				P4-511	E1			
-144	358	YEL				P4-512	E1			
-145	351	RED				P4-512	E1			
-111	361	YEL				P4-412	E1			
-112	354	YEL				P4-412	E1			
-78	350	RED				P4-312	E1			
-43	360	YEL				P4-312	E1			
-44	361	YEL				P4-312	E1			
-6	354	YEL				P4-112	E1			
-7	349	RED				P4-112	E1			
-24	343	YEL				P4-413	E1			
-215	338	RED				P4-112	E1			
-179	348	YEL				P4-413	E1			
-180	341	RED				P4-413	E1			
-146	344	YEL				P4-413	E1			
-147	330	RED				P4-413	E1			
-113	347	YEL				P4-413	E1			
-114	340	RED				P4-413	E1			
-143	341	YEL				P4-413	E1			
-81	334	YEL				P4-413	E1			
-45	346	YEL				P4-413	E1			
-46	339	RED				P4-413	E1			
-8	342	YEL				P4-614	E1			
-9	336	RED				P4-614	E1			
-216	331	YEL				P4-514	E1			
-217	324	RED				P4-514	E1			
-81	334	YEL				P4-414	E1			
-182	327	RED				P4-414	E1			
-148	330	YEL				P4-414	E1			
-149	323	RED				P4-414	E1			
-147	332	YEL				P4-414	E1			
-48	325	RED				P4-414	E1			
-82	328	YEL				P4-414	E1			
-83	320	RED				P4-414	E1			
-115	333	YEL				P4-414	E1			
-116	326	RED				P4-414	E1			
-3	371	YEL				P4-410	E1			
-141	378	YEL				P4-410	E1			
-209	370	YEL				P4-410	E1			
P3-107	364	SHLD								
P3-84	315	YEL				P4-205	E1			
-85	309	RED				P4-205	E1			
-280	306	YEL				P4-307	E1			
-221	299	RED				P4-307	E1			
-185	308	YEL				P4-407	E1			
-186	302	RED				P4-407	E1			
-188	317	YEL				P4-405	E1			
-215	311	RED				P4-405	E1			
-184	320	YEL				P4-405	E1			
-184	316	RED				P4-405	E1			
-51	320	YEL				P4-405	E1			
-117	319	YEL				P4-505	E1			
-118	313	RED				P4-505	E1			
-49	318	YEL				P4-505	E1			
-50	312	RED				P4-505	E1			
-51	306	YEL				P4-505	E1			
-12	302	YEL				P4-505	E1			
-11	321	YEL				P4-206	E1			
-141	328	YEL				P4-207	E1			
-209	370	YEL				P4-207	E1			
P3-187	296	SHLD								
P3-188	291	YEL				P4-430	E1			
-86	291	RED				P4-430	E1			
-86	303	YEL				P4-430	E1			
-55	288	RED				P4-430	E1			
-47	297	YEL				P4-430	E1			
-119	307	YEL				P4-430	E1			
-120	300	YEL				P4-430	E1			
-122	292	RED				P4-430	E1			
-123	294	YEL				P4-430	E1			
-121	288	RED				P4-430	E1			
-153	298	YEL				P4-430	E1			
-154	294	YEL				P4-430	E1			
-157	290	YEL				P4-430	E1			
-141	290	YEL				P4-430	E1			
P3-89	289	SHLD								

ASSEMBLY INFORMATION CHART										
REMARKS	FROM			DESCRIPTION			TO			REMARKS
	DESTINATION	RUN NO.	COLOR	ANG.	FIND NO.	RUN NO.	DESTINATION			
P3-90	458	26	9			200	P4-310			
-61	468	RED				201	P4-310			
-38	478	YEL				201	P4-210			
-39	488	RED				201	P4-210			
-40	498	YEL				16	P4-511			
-41	508	RED				17	E1			
-67	517	YEL				18	P4-311			
-66	512	RED				19	P4-311			
-37	478	YEL				197	P4-311			
-20	484	RED					E2			
-21	494	YEL				198	P4-211			
-22	504	RED					E2			
-42	515	YEL				109	P4-111			
-68	521	RED				12	E2			
-39	478	YEL				19	P4-212			
-29	459	RED				20	P4-512			
-25	469	YEL					E3			
-39	478	YEL				21	P4-412			
-8	489	YEL					E3			
-9	499	RED				194	P4-312			
-23	509	YEL					E3			
-43	518	RED				195	P4-212		LEG 1	
-37	478	YEL				196	P4-112			
-38	488	RED					E4			
-39	498	YEL				22	P4-615			
-40	508	RED					E4			
-41	518	YEL				23	P4-515			
-42	528	RED					E4			
-43	538	YEL				191	P4-315			
-44	548	RED					E5			
-34	460	YEL				192	P4-215			
-17	470	YEL					E5			
-6	480	YEL				193	P4-115			
-1	490	RED					E5			
-3	500	YEL				25	P4-116			
-11	510	RED					E6			
-5	496	YEL				190	P4-114			
-4	496	YEL					E6			
-33	466	YEL				189	P4-214			
-16	476	YEL					E6			
-25	519	YEL				26	P4-314			
-45	526	RED					E6			
-71	530	YEL				27	P4-414			
-70	528	YEL					E6			
-88	450	YEL			9		P4-314			
-286	156	YEL				10	P4-516			
-12	506	YEL			10	15	P4-516			
-46	523	YEL			10	15	P4-416			
-72	529	YEL			10	202	P4-110			
-26	515	YEL		26	10	14	P4-510			
PH-75	527	SM-LD								

[illegible]

ASSEMBLY INFORMATION CHART									
FROM			DESCRIPTION				TO		
REMARKS	DESTINATION	RUN NO.	COLOR	AWG	SIZE	RUN NO.	DESTINATION	REMARKS	
	P4-89	601	VEL			82	P4-436		
	P4-88	602	RED	26	9	84	P4-437		
	P4-336	83	VEL			587	P6-60		
	P4-337	85	RED			596	P6-59		
	P4-37	593	RED			78	P4-438		
	P4-36	590	RED			81	P4-435		
	P4-38	134	VEL			582	P6-18		
	P4-130	132	RED			581	P6-17		
	P6-21	576	VEL			143	P4-234		
	P6-8	575	RED			142	P4-235		
	P4-144	44	VEL			587	P6-22		
	P4-155	141	RED			586	P6-8		
	P4-42	589	VEL			132	P4-234		
	P6-23	558	RED			150	P4-237		
	P4-136	138	VEL			551	P6-45		
	P4-137	140	RED			549	P6-68		
	P6-35	589	VEL			133	P4-238		
	P4-34	586	RED			131	P4-239		
	P4-345	108	RED			578	P6-7		
	P4-347	108	RED			573	P6-6		
	P6-1	565	VEL			118	P4-246		
	P6-1	564	RED			112	P4-247		
	P4-438	86	VEL			557	P6-10		
	P4-439	86	RED			556	P6-3		
	P4-25	550	RED			87	P4-138		
	P6-11	549	RED			83	P4-139		
	P4-440	91	VEL			587	P6-20		
	P4-441	93	RED			578	P6-25		
	P6-33	540	VEL			128	P4-362		
	P6-32	571	RED			92	P4-341		
	P4-260	129	VEL			572	P6-16		
	P4-341	126	RED			566	P6-15		
	P6-3	563	VEL			565	P6-16		
	P6-14	554	RED			127	P4-161		
	P4-446	105	VEL			543	P6-40		
	P4-447	607	RED			542	P6-28		
	P6-4	555	RED			96	P6-43		
	P6-13	547	RED			98	RED-443		
	P4-34	123	RED			548	P6-12		
	P4-341	99	RED			540	P6-27		
	P4-54	570	VEL			124	P4-462		
	P6-53	560	RED			121	P6-5		
	P4-142	129	VEL			551	P6-31		
	P4-153	122	RED			562	P6-25		
	P6-50	553	RED			101	P4-444		
	P6-51	545	RED			103	P4-445		
	P4-544	118	VEL			546	P6-45		
	P4-343	104	RED			536	P6-30		
	P6-28	539	VEL			119	P4-284		
	P6-49	534	RED			116	RED-445		
	P4-144	104	RED			537	P6-26		
	P4-145	117	RED			533	P6-73		
	P6-20	584	RED			105	P4-284		
	P6-19	583	RED			108	P4-355		
	P4-540	90	VEL			532	P6-74		
	P4-541	92	RED			531	P6-75		
	P6-58	593	VEL			109	P4-149		
	P6-57	594	RED			110	P4-150		
	P4-424	52	VEL			376-1	P6-61		
	P4-425	54	RED			430	P7-60		
	P7-38	441	VEL			384	P4-364		
	P7-37	438	RED			382	P4-365		
	P4-422	48	VEL			427	P7-59		
	P4-423	50	RED			410	P7-58		
	P7-36	143	VEL			389	P4-362		
	P7-35	413	RED			391	P4-363		
	P4-416	32	VEL			453	P7-59		
	P4-417	35	RED			459	P7-60		
	P7-50	444	VEL			383	P4-346		
	P7-21	437	RED			445	P7-61		
	P4-216	184	VEL			440	P7-62		
	P4-217	181	RED			442	P7-63		
	P7-67	447	RED			385	P4-166		
	P7-42	442	RED			182	P4-177		
	P4-418	37	VEL			426	P7-64		
	P4-419	40	RED			178	P4-166		
	P7-8	428	VEL			38	P4-318		
	P7-7	418	RED			41	P4-319		
	P4-122	169	RED			432	P7-70		
	P4-123	167	RED			425	P7-71		
	P7-9	431	VEL			78	P4-218		
	P7-2	421	RED			176	P4-219		
	P4-118	179	VEL			434	P7-53		
	P4-119	171	RED			424	P7-10		
	P7-43	436	RED			44	P4-320		
	P7-24	427	RED			47	P4-321		
	P4-320	173	VEL			438	P7-69		
	P4-321	170	RED			439	P7-64		
	P7-57	601	VEL			178	P4-220		
	P7-36	396	VEL			37	P4-241		
	P4-500	175	VEL			403	P7-14		
	P4-501	172	RED			398	P7-23		
	P7-45	422	VEL			384	P7-24		
	P7-72	414	RED			37	RED-445		
	P4-124	405	VEL			48	P7-25		
	P7-113	163	RED			412	P7-72		
	P7-117	409	VEL			168	P4-222		
	P7-18	430	RED			166	P4-123		
	P6-66	30	VEL			283	P4-180		
	P4-617	53	RED			283	P5-191		
	P3-152	287	VEL			31	P4-186		
	P5-183	271	RED			34	P4-197		
	P4-618	36	VEL			275	P4-194		
	P4-619	34	RED			272	P4-190		
	P4-620	284	RED			77	P4-314		
	P7-100	481	RED			60	P4-535		
	P4-621	46	RED			43	P5-153		
	P3-125	276	VEL	26	9	43	P4-520		

ASSEMBLY INFORMATION CHART										
REMARKS	FROM		DESCRIPTION				TO		REMARKS	
	DESTINATION	RUN NO.	COLOR	AWG	FINE NO.	RUN NO.	DESTINATION			
	P4-634	76	YEL	26	9	273	P3-94			
	P7-1	39	YEL			277	P3-95			
	P3-234	287	YEL	26	9	100	P4-644			
	P3-276	286	RED			152	P4-645			
	P4-642	95	YEL			238	P3-96			
	P4-543	97	RED	26	9	239	P3-98			
	P3-5	306	YEL	26	10	145	P4-333			
	P4-27	181				415	P7-3			
	P7-1	411				189	P3-17			
	P4-227	460				408	P7-6			
	P7-1	479				15	P4-238			
	P3-23	187				2781	P7-8			
	P7-4	446				15	P4-29			
	P4-502					302	P3-74			
	P3-5	350				3	P4-503			
	P4-5	5				186	P3-39			
	P3-108	381				1	P4-633			
	P4-634	4				303	P3-173			
	P3-63	483				1	P4-502			
	P3-53	3				503	P7-105			
	P3-91	463				3	P4-504			
	P4-633					493	P7-106			
	P3-108	473	Y	26	10	1	P4-504			
	P3-23	263	YEL	24	18	609	P2-64			
	P4-23	649	YEL	24	12	236	P3-203			
	P2-93	651	YEL			231	P7-173			
	P3-243	204	YEL			613	P2-72			
	P3-342	238	RED			616	P2-73			
	P2-72	622	YEL			240	P4-66			
	P3-26	618	RED			265	P3-97			
	P3-199	250	YEL			627	P2-4			
	P3-505	253	YEL			631	P2-19			
	P2-45	639	YEL			239	P3-106			
	P4-64	634	RED			234	P3-109			
	P3-101	247	YEL			637	P2-6			
	P3-203	362	RED			644	P2-3			
	P2-33	671	YEL	24	12	227	P2-2			
	P2-58	646	RED			233	P4-171			
	P3-101	244	YEL			606	P2-65			
	P3-103	241	YEL			607	P2-1			
	P3-104	250	GREEN	22	15	610	P2-20			
	P2-49	629	YEL			257	P2-131			
	P2-60	624	YEL			260	P2-132			
	P2-90	620	GREEN			246	P4-167			
	P3-243	265	YEL			828	P2-8			
	P3-197	257	YEL			632	P2-35			
	P3-98	262	GREEN			625	P2-36			
	P2-138	638	YEL			264	P3-97			
	P2-10	642	RED			269	P3-98			
	P7-93	635	GREEN			261	P4-130			
	P7-99	255	YEL			623	P2-7			
	P4-130	269	RED			615	P2-2			
	P3-132	252	GREEN			617	P2-8			
	P7-67	604	YEL			612	P2-10A			
	P4-63	605	RED			236	P3-104			
	P2-42	608	GREEN			230	P3-136			
	P2-76	541	YEL			115	P4-146			
	P4-47	536	RED	22	15	113	P4-148			
	P4-48	535	GREEN			114	P4-148			
	P4-541	97	YEL			613	P2-9			
	P3-28	268	RED	22	16	611	P3-83			
	P3-13	266	GREEN			615	P2-39			
	P3-36	269	YEL			614	P3-63			
	P2-83	653	YEL			237	P3-66			
	P2-80	654	RED	24	11	246	P3-67			
	P4-24	648	SHLD			248	P3-32			
	P7-6	621	YEL				E18			
	P7-6	630	RED				E18			
	P4-8	628	SHLD							
	P7-6	633	YEL			243	P3-33			
	P7-6	636	RED				E19			
	P7-7	640	SHLD			237	P3-36			
	P3-5	650	YEL			243	P3-64			
	P7-8	655	RED				E19			
	P7-8	652	SHLD							
	P7-6	645	YEL	24	11	225	P3-36			
	P7-5	647	RED			233	P3-35			
	P3-61	643	SHLD			229	P3-70			
	P3-17	211	YEL	22	17	599	P6-64			
	P7-8	252								
	P7-9	245				598				
	P7-6	246				582	-61			
	P7-8	238				586	-64			
	-10	221				578	-65			
	-11	222				575	-60			
	-2	218	YEL	17	17	577	-63			
	-5	214	BLK	18	18	603	-61			
	-15	213	BLK			602	-50			
	-13	220	BLK			610	-61			
	P5-14	217	BLK	22	18	568	P4-61			

TWIST  
12  
WIRES  
TOGETHER

INTERNAL CONNECTION CHART					REMARKS
REMARKS	FROM	FIND NO.	LENGTH	TO	
	E 9	16	3.00	E10	
	E10	17	2.00	E11	*
	E 8	18	2.00	E 9	
	E 7	19	3.00	E10	*
	E 6	20	3.00	E 7	
	E 5	21	2.00	E 6	
	E 4	22	3.00	E 5	
	E 3	23	2.00	E 4	
	E 2	24	3.00	E 3	
	E11	25	1.80	E12	
	E12	26	3.00	E13	
	E13	27	3.00	E14	
	E14	28	1.10	E15	
	E15	29	2.00	E16	
	E16	30	1.17	E17	
	E17	31	2.8	E18	
	E18	32	—	E19	
	E19	33	—	E20	
	E20	34	—	E21	
	E21	35	—	E22	
	E22	36	—	E23	
	E23	37	—	E24	
	E24	38	—	E25	
	E25	39	—	E26	
	E26	40	—	E27	
	E27	41	—	E28	
	E28	42	—	E29	
	E29	43	—	E30	
	E30	44	—	E31	
	E31	45	—	E32	
	E32	46	—	E33	
	E33	47	—	E34	
	E34	48	—	E35	
	E35	49	—	E36	
	E36	50	—	E37	
	E37	51	—	E38	
	E38	52	—	E39	
	E39	53	—	E40	
	E40	54	—	E41	
	E41	55	—	E42	
	E42	56	—	E43	
	E43	57	—	E44	
	E44	58	—	E45	
	E45	59	—	E46	
	E46	60	—	E47	
	E47	61	—	E48	
	E48	62	—	E49	
	E49	63	—	E50	
	E50	64	—	E51	
	E51	65	—	E52	
	E52	66	—	E53	
	E53	67	—	E54	
	E54	68	—	E55	
	E55	69	—	E56	
	E56	70	—	E57	
	E57	71	—	E58	
	E58	72	—	E59	
	E59	73	—	E60	
	E60	74	—	E61	
	E61	75	—	E62	
	E62	76	—	E63	
	E63	77	—	E64	
	E64	78	—	E65	
	E65	79	—	E66	
	E66	80	—	E67	
	E67	81	—	E68	
	E68	82	—	E69	
	E69	83	—	E70	
	E70	84	—	E71	
	E71	85	—	E72	
	E72	86	—	E73	
	E73	87	—	E74	
	E74	88	—	E75	
	E75	89	—	E76	
	E76	90	—	E77	
	E77	91	—	E78	
	E78	92	—	E79	
	E79	93	—	E80	
	E80	94	—	E81	
	E81	95	—	E82	
	E82	96	—	E83	
	E83	97	—	E84	
	E84	98	—	E85	
	E85	99	—	E86	
	E86	100	—	E87	
	E87	101	—	E88	
	E88	102	—	E89	
	E89	103	—	E90	
	E90	104	—	E91	
	E91	105	—	E92	
	E92	106	—	E93	
	E93	107	—	E94	
	E94	108	—	E95	
	E95	109	—	E96	
	E96	110	—	E97	
	E97	111	—	E98	
	E98	112	—	E99	
	E99	113	—	E100	
	E100	114	—	E101	
	E101	115	—	E102	
	E102	116	—	E103	
	E103	117	—	E104	
	E104	118	—	E105	
	E105	119	—	E106	
	E106	120	—	E107	
	E107	121	—	E108	
	E108	122	—	E109	
	E109	123	—	E110	
	E110	124	—	E111	
	E111	125	—	E112	
	E112	126	—	E113	
	E113	127	—	E114	
	E114	128	—	E115	
	E115	129	—	E116	
	E116	130	—	E117	
	E117	131	—	E118	
	E118	132	—	E119	
	E119	133	—	E120	
	E120	134	—	E121	
	E121	135	—	E122	
	E122	136	—	E123	
	E123	137	—	E124	
	E124	138	—	E125	
	E125	139	—	E126	
	E126	140	—	E127	
	E127	141	—	E128	
	E128	142	—	E129	
	E129	143	—	E130	
	E130	144	—	E131	
	E131	145	—	E132	
	E132	146	—	E133	
	E133	147	—	E134	
	E134	148	—	E135	
	E135	149	—	E136	
	E136	150	—	E137	
	E137	151	—	E138	
	E138	152	—	E139	
	E139	153	—	E140	
	E140	154	—	E141	
	E141	155	—	E142	
	E142	156	—	E143	
	E143	157	—	E144	
	E144	158	—	E145	
	E145	159	—	E146	
	E146	160	—	E147	
	E147	161	—	E148	
	E148	162	—	E149	
	E149	163	—	E150	
	E150	164	—	E151	
	E151	165	—	E152	
	E152	166	—	E153	
	E153	167	—	E154	
	E154	168	—	E155	
	E155	169	—	E156	
	E156	170	—	E157	
	E157	171	—	E158	
	E158	172	—	E159	
	E159	173	—	E160	
	E160	174	—	E161	
	E161	175	—	E162	
	E162	176	—	E163	
	E163	177	—	E164	
	E164	178	—	E165	
	E165	179	—	E166	
	E166	180	—	E167	
	E167	181	—	E168	
	E168	182	—	E169	
	E169	183	—	E170	
	E170	184	—	E171	
	E171	185	—	E172	
	E172	186	—	E173	
	E173	187	—	E174	
	E174	188	—	E175	
	E175	189	—	E176	
	E176	190	—	E177	
	E177	191	—	E178	
	E178	192	—	E179	
	E179	193	—	E180	
	E180	194	—	E181	
	E181	195	—	E182	
	E182	196	—	E183	
	E183	197	—	E184	
	E184	198	—	E185	
	E185	199	—	E186	
	E186	200	—	E187	
	E187	201	—	E188	
	E188	202	—	E189	
	E189	203	—	E190	
	E190	204	—	E191	
	E191	205	—	E192	
	E192	206	—	E193	
	E193	207	—	E194	
	E194	208	—	E195	
	E195	209	—	E196	
	E196	210	—	E197	
	E197	211	—	E198	
	E198	212	—	E199	
	E199	213	—	E200	
	E200	214	—	E201	
	E201	215	—	E202	
	E202	216	—	E203	
	E203	217	—	E204	
	E204	218	—	E205	
	E205	219	—	E206	
	E206	220	—	E207	
	E207	221	—	E208	
	E208	222	—	E209	
	E209	223	—	E210	
	E210	224	—	E211	
	E211	225	—	E212	
	E212	226	—	E213	
	E213	227	—	E214	
	E214	228	—	E215	
	E215	229	—	E216	
	E216	230	—	E217	
	E217	231	—	E218	
	E218	232	—	E219	
	E219	233	—	E220	
	E220	234	—	E221	
	E221	235	—	E222	
	E222	236	—	E223	
	E223	237	—	E224	
	E224	238	—	E225	
	E225	239	—	E226	
	E226	240	—	E227	
	E227	241	—	E228	
	E228	242	—	E229	
	E229	243	—	E230	
	E230	244	—	E231	
	E231	245	—	E232	
	E232	246	—	E233	
	E233	247	—	E234	
	E234	248	—	E235	
	E235	249	—	E236	
	E236	250	—	E237	
	E237	251	—	E238	
	E238	252	—	E239	
	E239	253	—	E240	
	E240	254	—	E241	
	E241	255	—	E242	
	E242	256	—	E243	
	E243	257	—	E244	
	E244	258	—	E245	
	E245	259	—	E246	
	E246	260	—	E247	
	E247	261	—	E248	
	E248	262	—	E249	
	E249	263	—	E250	
	E250	264	—	E251	
	E251	265	—	E252	
	E252	266	—	E253	
	E253	267	—	E254	
	E254	268	—	E255	
	E255	269	—	E256	
	E256	270	—	E257	
	E257	271	—	E258	
	E258	272	—	E259	
	E259	273	—	E260	
	E260	274	—	E261	
	E261	275	—	E262	
	E262	276	—	E263	
	E263	277	—	E264	
	E264	278	—	E265	
	E265	279	—	E266	
	E266	280	—	E267	
	E267	281	—	E268	
	E268	282	—	E269	
	E269	283	—	E270	
	E270	284	—	E271	
	E271	285	—	E272	
	E272	286	—	E273	
	E273	287	—	E274	
	E274	288	—	E275	
	E275	289	—	E276	
	E276	290	—	E277	
	E277	291	—	E278	
	E278	292	—	E279	
	E279	293	—	E280	
	E280	294	—	E281	
	E281	295	—	E282	
	E282	296	—	E283	
	E283	297	—	E284	
	E284	298	—	E285	
	E285	299	—	E286	
	E286	300	—	E287	
	E287	301	—	E288	
	E288	302	—	E289	
	E289	303	—	E290	
	E290	304	—	E291	
	E291	305	—	E292	
	E292	306	—	E293	
	E293	307	—	E294	
	E294	308	—	E295	
	E295	309	—	E296	
	E296	310	—	E297	
	E297	311	—	E298	
	E298	312	—	E299	
	E299	313	—	E300	
	E300	314	—	E301	

ⓑ REPLACES REVA WITH CHANGE

1. <input type="checkbox"/> <b>NEW</b> INFORMATION DISCOVERED 2. <input type="checkbox"/> <b>REVISIONS</b> ARE TO BE DISCOVERED 3. <input type="checkbox"/> <b>CHANGES</b> RELAYED FROM 4. <input type="checkbox"/> <b>REVISIONS</b> VALUES AND IN COMPLIANCE 5. <input type="checkbox"/> <b>CHANGES</b> TO 6. <input type="checkbox"/> <b>FACTORS</b> SPECIALS AND 7. <input type="checkbox"/> <b>DO NOT SCALE</b> THIS DRAWING 8. <input type="checkbox"/> <b>OTHER</b>	9. <input type="checkbox"/> <b>EXEMPT</b> 10. <input type="checkbox"/> <b>APPROVED</b> 11. <input type="checkbox"/> <b>APPROVED</b> 12. <input type="checkbox"/> <b>APPROVED</b> 13. <input type="checkbox"/> <b>APPROVED</b> 14. <input type="checkbox"/> <b>APPROVED</b> 15. <input type="checkbox"/> <b>APPROVED</b> 16. <input type="checkbox"/> <b>APPROVED</b> 17. <input type="checkbox"/> <b>APPROVED</b> 18. <input type="checkbox"/> <b>APPROVED</b> 19. <input type="checkbox"/> <b>APPROVED</b> 20. <input type="checkbox"/> <b>APPROVED</b> 21. <input type="checkbox"/> <b>APPROVED</b> 22. <input type="checkbox"/> <b>APPROVED</b> 23. <input type="checkbox"/> <b>APPROVED</b> 24. <input type="checkbox"/> <b>APPROVED</b> 25. <input type="checkbox"/> <b>APPROVED</b> 26. <input type="checkbox"/> <b>APPROVED</b> 27. <input type="checkbox"/> <b>APPROVED</b> 28. <input type="checkbox"/> <b>APPROVED</b> 29. <input type="checkbox"/> <b>APPROVED</b> 30. <input type="checkbox"/> <b>APPROVED</b> 31. <input type="checkbox"/> <b>APPROVED</b> 32. <input type="checkbox"/> <b>APPROVED</b> 33. <input type="checkbox"/> <b>APPROVED</b> 34. <input type="checkbox"/> <b>APPROVED</b> 35. <input type="checkbox"/> <b>APPROVED</b> 36. <input type="checkbox"/> <b>APPROVED</b> 37. <input type="checkbox"/> <b>APPROVED</b> 38. <input type="checkbox"/> <b>APPROVED</b> 39. <input type="checkbox"/> <b>APPROVED</b> 40. <input type="checkbox"/> <b>APPROVED</b> 41. <input type="checkbox"/> <b>APPROVED</b> 42. <input type="checkbox"/> <b>APPROVED</b> 43. <input type="checkbox"/> <b>APPROVED</b> 44. <input type="checkbox"/> <b>APPROVED</b> 45. <input type="checkbox"/> <b>APPROVED</b> 46. <input type="checkbox"/> <b>APPROVED</b> 47. <input type="checkbox"/> <b>APPROVED</b> 48. <input type="checkbox"/> <b>APPROVED</b> 49. <input type="checkbox"/> <b>APPROVED</b> 50. <input type="checkbox"/> <b>APPROVED</b> 51. <input type="checkbox"/> <b>APPROVED</b> 52. <input type="checkbox"/> <b>APPROVED</b> 53. <input type="checkbox"/> <b>APPROVED</b> 54. <input type="checkbox"/> <b>APPROVED</b> 55. <input type="checkbox"/> <b>APPROVED</b> 56. <input type="checkbox"/> <b>APPROVED</b> 57. <input type="checkbox"/> <b>APPROVED</b> 58. <input type="checkbox"/> <b>APPROVED</b> 59. <input type="checkbox"/> <b>APPROVED</b> 60. <input type="checkbox"/> <b>APPROVED</b> 61. <input type="checkbox"/> <b>APPROVED</b> 62. <input type="checkbox"/> <b>APPROVED</b> 63. <input type="checkbox"/> <b>APPROVED</b> 64. <input type="checkbox"/> <b>APPROVED</b> 65. <input type="checkbox"/> <b>APPROVED</b> 66. <input type="checkbox"/> <b>APPROVED</b> 67. <input type="checkbox"/> <b>APPROVED</b> 68. <input type="checkbox"/> <b>APPROVED</b> 69. <input type="checkbox"/> <b>APPROVED</b> 70. <input type="checkbox"/> <b>APPROVED</b> 71. <input type="checkbox"/> <b>APPROVED</b> 72. <input type="checkbox"/> <b>APPROVED</b> 73. <input type="checkbox"/> <b>APPROVED</b> 74. <input type="checkbox"/> <b>APPROVED</b> 75. <input type="checkbox"/> <b>APPROVED</b> 76. <input type="checkbox"/> <b>APPROVED</b> 77. <input type="checkbox"/> <b>APPROVED</b> 78. <input type="checkbox"/> <b>APPROVED</b> 79. <input type="checkbox"/> <b>APPROVED</b> 80. <input type="checkbox"/> <b>APPROVED</b> 81. <input type="checkbox"/> <b>APPROVED</b> 82. <input type="checkbox"/> <b>APPROVED</b> 83. <input type="checkbox"/> <b>APPROVED</b> 84. <input type="checkbox"/> <b>APPROVED</b> 85. <input type="checkbox"/> <b>APPROVED</b> 86. <input type="checkbox"/> <b>APPROVED</b> 87. <input type="checkbox"/> <b>APPROVED</b> 88. <input type="checkbox"/> <b>APPROVED</b> 89. <input type="checkbox"/> <b>APPROVED</b> 90. <input type="checkbox"/> <b>APPROVED</b> 91. <input type="checkbox"/> <b>APPROVED</b> 92. <input type="checkbox"/> <b>APPROVED</b> 93. <input type="checkbox"/> <b>APPROVED</b> 94. <input type="checkbox"/> <b>APPROVED</b> 95. <input type="checkbox"/> <b>APPROVED</b> 96. <input type="checkbox"/> <b>APPROVED</b> 97. <input type="checkbox"/> <b>APPROVED</b> 98. <input type="checkbox"/> <b>APPROVED</b> 99. <input type="checkbox"/> <b>APPROVED</b> 100. <input type="checkbox"/> <b>APPROVED</b>	1. <input type="checkbox"/> <b>NEW</b> INFORMATION DISCOVERED 2. <input type="checkbox"/> <b>REVISIONS</b> ARE TO BE DISCOVERED 3. <input type="checkbox"/> <b>CHANGES</b> RELAYED FROM 4. <input type="checkbox"/> <b>REVISIONS</b> VALUES AND IN COMPLIANCE 5. <input type="checkbox"/> <b>CHANGES</b> TO 6. <input type="checkbox"/> <b>FACTORS</b> SPECIALS AND 7. <input type="checkbox"/> <b>DO NOT SCALE</b> THIS DRAWING 8. <input type="checkbox"/> <b>OTHER</b>	9. <input type="checkbox"/> <b>EXEMPT</b> 10. <input type="checkbox"/> <b>APPROVED</b> 11. <input type="checkbox"/> <b>APPROVED</b> 12. <input type="checkbox"/> <b>APPROVED</b> 13. <input type="checkbox"/> <b>APPROVED</b> 14. <input type="checkbox"/> <b>APPROVED</b> 15. <input type="checkbox"/> <b>APPROVED</b> 16. <input type="checkbox"/> <b>APPROVED</b> 17. <input type="checkbox"/> <b>APPROVED</b> 18. <input type="checkbox"/> <b>APPROVED</b> 19. <input type="checkbox"/> <b>APPROVED</b> 20. <input type="checkbox"/> <b>APPROVED</b> 21. <input type="checkbox"/> <b>APPROVED</b> 22. <input type="checkbox"/> <b>APPROVED</b> 23. <input type="checkbox"/> <b>APPROVED</b> 24. <input type="checkbox"/> <b>APPROVED</b> 25. <input type="checkbox"/> <b>APPROVED</b> 26. <input type="checkbox"/> <b>APPROVED</b> 27. <input type="checkbox"/> <b>APPROVED</b> 28. <input type="checkbox"/> <b>APPROVED</b> 29. <input type="checkbox"/> <b>APPROVED</b> 30. <input type="checkbox"/> <b>APPROVED</b> 31. <input type="checkbox"/> <b>APPROVED</b> 32. <input type="checkbox"/> <b>APPROVED</b> 33. <input type="checkbox"/> <b>APPROVED</b> 34. <input type="checkbox"/> <b>APPROVED</b> 35. <input type="checkbox"/> <b>APPROVED</b> 36. <input type="checkbox"/> <b>APPROVED</b> 37. <input type="checkbox"/> <b>APPROVED</b> 38. <input type="checkbox"/> <b>APPROVED</b> 39. <input type="checkbox"/> <b>APPROVED</b> 40. <input type="checkbox"/> <b>APPROVED</b> 41. <input type="checkbox"/> <b>APPROVED</b> 42. <input type="checkbox"/> <b>APPROVED</b> 43. <input type="checkbox"/> <b>APPROVED</b> 44. <input type="checkbox"/> <b>APPROVED</b> 45. <input type="checkbox"/> <b>APPROVED</b> 46. <input type="checkbox"/> <b>APPROVED</b> 47. <input type="checkbox"/> <b>APPROVED</b> 48. <input type="checkbox"/> <b>APPROVED</b> 49. <input type="checkbox"/> <b>APPROVED</b> 50. <input type="checkbox"/> <b>APPROVED</b> 51. <input type="checkbox"/> <b>APPROVED</b> 52. <input type="checkbox"/> <b>APPROVED</b> 53. <input type="checkbox"/> <b>APPROVED</b> 54. <input type="checkbox"/> <b>APPROVED</b> 55. <input type="checkbox"/> <b>APPROVED</b> 56. <input type="checkbox"/> <b>APPROVED</b> 57. <input type="checkbox"/> <b>APPROVED</b> 58. <input type="checkbox"/> <b>APPROVED</b> 59. <input type="checkbox"/> <b>APPROVED</b> 60. <input type="checkbox"/> <b>APPROVED</b> 61. <input type="checkbox"/> <b>APPROVED</b> 62. <input type="checkbox"/> <b>APPROVED</b> 63. <input type="checkbox"/> <b>APPROVED</b> 64. <input type="checkbox"/> <b>APPROVED</b> 65. <input type="checkbox"/> <b>APPROVED</b> 66. <input type="checkbox"/> <b>APPROVED</b> 67. <input type="checkbox"/> <b>APPROVED</b> 68. <input type="checkbox"/> <b>APPROVED</b> 69. <input type="checkbox"/> <b>APPROVED</b> 70. <input type="checkbox"/> <b>APPROVED</b> 71. <input type="checkbox"/> <b>APPROVED</b> 72. <input type="checkbox"/> <b>APPROVED</b> 73. <input type="checkbox"/> <b>APPROVED</b> 74. <input type="checkbox"/> <b>APPROVED</b> 75. <input type="checkbox"/> <b>APPROVED</b> 76. <input type="checkbox"/> <b>APPROVED</b>
--	--	--	---

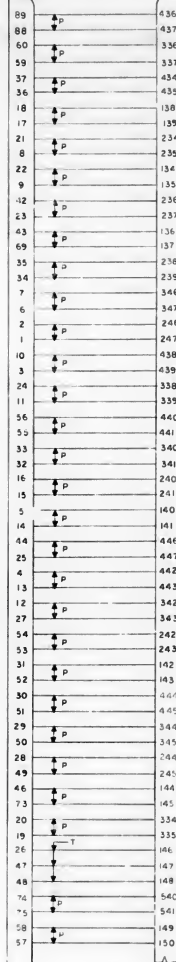
F-2/2



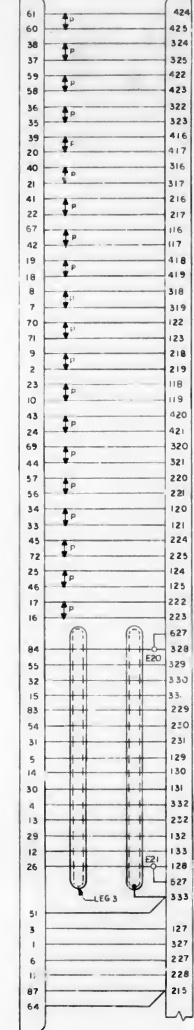
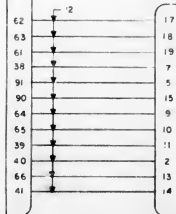
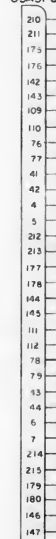
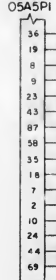
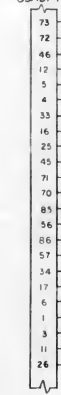
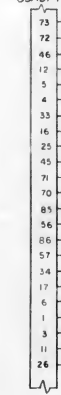
05A5P6

PART OF  
05A5P4

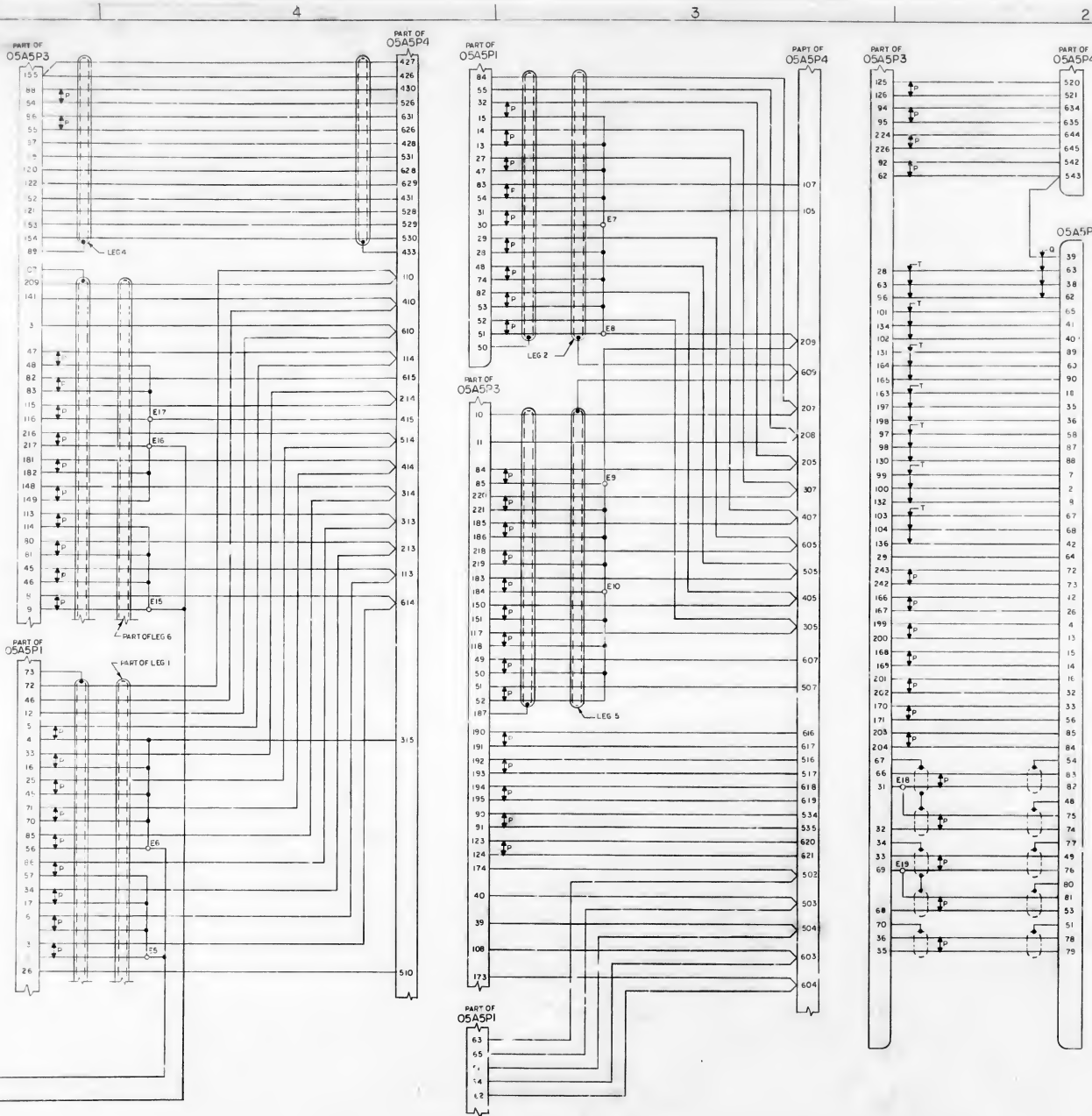
05A5P7

PART OF  
05A5P4PART OF  
05A5P1PART OF  
05A5P3PART OF  
05A5P4PART OF  
05A5P1

05A5P5

PART OF  
05A5P3PART OF  
05A5P1PART OF  
05A5P1PART OF  
05A5P1PART OF  
05A5P3PART OF  
05A5P1





REVISIONS		DATE	BY	REASON
B	REPLACES REV A WITH CHANGES PER TORR 17889			
C	REVISED PER TORR 18096			
D	REVISED PER TORR 19757			

REPLACES REV A WITH CHANGE

ITEM	DESCRIPTION	QUANTITY	UNIT	REMARKS
1005798	WIRING DIAGRAM	1	REF	
1.2	SEE NOTE 3		INSULATION, ELEC	50
1.5	SEE NOTE 3		INSULATION, ELEC	49
1	1010102-1		SEAL, RUBBER	48
4	SEE NOTE 3		INSULATION, ELEC	47
3	SEE NOTE 3		INSULATION, ELEC	46
5	1006322-022		INSULATION, ELEC	45
2	1000242-37		FERRULE, ELEC	44
2	1000243-41		FERRULE, ELEC	43
2	1006322-025		INSULATION, ELEC	42
2	1006322-001		INSULATION, ELEC	41
2	1006322-104		INSULATION, ELEC	40
43	1006322-007		INSULATION, ELEC	39
35	1010789-001		WIRE, ELEC, AWG 22, VEL	38
1006322-018			INSULATION, ELEC	37
2	MSH035-1-2		BAND, MARKING, CABLE	36
1	1010507-003		TAPE, LACING	35
1	1010402-2		SLEEVE, SOLDER	34
21	1010402-1		SLEEVE, SOLDER	33
2	1000242-32		FERRULE, ELEC	32
2	1000243-34		FERRULE, ELEC	31
2	1000242-36		FERRULE, ELEC	30
2	1000243-27		FERRULE, ELEC	29
6	1000242-29		FERRULE, ELEC	28
6	1000243-31		FERRULE, ELEC	27
5	1006322-019		INSULATION, ELEC	26
7	SEE NOTE 3		INSULATION, ELEC	25
3.6	SEE NOTE 3		INSULATION, ELEC	24
3.5	SEE NOTE 3		INSULATION, ELEC	23
3.7	SEE NOTE 4		WIRE, BRAID	22
3.6	SEE NOTE 4		WIRE, BRAID	21
3.5	SEE NOTE 4		WIRE, BRAID	20
22	1010789-007		WIRE, ELEC, AWG 22, BLK	19
11	1010789-006		WIRE, ELEC, AWG 22, VEL	18
4	1010789-010		WIRE, ELEC, AWG 22, COND, TW	17
3	1010789-009		WIRE, ELEC, AWG 22, COND, TW	16
20	1010789-003		WIRE, ELEC, AWG 24, 2 COND, TW	15
1010789-012			WIRE, ELEC, AWG 24, 2 COND, SHLD	14
170	1010789-006		WIRE, ELEC, AWG 26, VEL	13
365	1010789-017		WIRE, ELEC, AWG 26, 2 COND, TW	12
244	1010738-5		CONTACT, ELEC, PIN	11
1	1010771-013		CONNECTOR, PLUG, ELEC	10
1	1010771-011		CONNECTOR, PLUG, ELEC	9
1	1010771-010		CONNECTOR, PLUG, ELEC	8
1	1010771-013		CONNECTOR, PLUG, ELEC	7
1	1010771-014		CONNECTOR, PLUG, ELEC	6
1	1010771-014		CONNECTOR, PLUG, ELEC	5
1	1010771-014		CONNECTOR, PLUG, ELEC	4
1	1010771-014		CONNECTOR, PLUG, ELEC	3
1	1010771-014		CONNECTOR, PLUG, ELEC	2
1	1010771-014		CONNECTOR, PLUG, ELEC	1

005727

F 2 / 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL		MILITARY INSTRUMENTATION LAB FORM 100-100 APPROVED: [Signature] DATE: 11/16/64 BY: [Signature]	
NEXT COPY USED ON APPLICATION		MANNED SPACE PART CENTER MONTHLY YEAR WIRING HARNESS AGC TO PSAB G/N TO SPACECRAFT APPROVED: [Signature] DATE: 11/16/64 BY: [Signature]	

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER. AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVERTING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

1005777 D

REVISIONS 12034			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12250	7/1/64	W.R.
B	REVISED PER TDRR 12462	7/1/64	W.R.
C	REVISED PER TDRR 14347	11/16/64	W.R.
D	REVISED PER TDRR 14768 DR <i>development</i> CHK OUT <i>27</i>	2/1/65	<i>W.R.</i>

COMPUTER 100 SERIES WIRE LIST

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
		FRACTIONS DECIMALS ANGLES
		± ± ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS NO. <i>1005777</i> CONTRACT <i>1005777</i> DRAWN <i>W.R.</i> DATE <i>7/1/64</i> CHECKED <i>W.R.</i> APPROVAL <i>W.R.</i> APPROVAL <i>W.R.</i>		COMPUTER WIRE LIST	
NASA APPROVAL <i>W.R.</i>		CODE IDENT NO. <b>C</b>	NASA DRAWING NO. <b>1005777</b>
MIT APPROVAL <i>W.R.</i>		SCALE	WT
		SHEET 1	OF 1

REVISIONS 12034			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 14349	7/2/94	WIL

```

2  - 7      CARD SEQUENCE NUMBER, IN DECIMAL
9  - 22 USAGE      BINARY MACHINE DATA, IN THE FORMAT DESCRIBED BY A
                    GARDNER-DENVER CO. DRAW NG NUMBER 800384, REVISION A,
                    FOR THEIR MODEL 14F-1515X.125 WIRE WRAP MACHINE
27 - 33      SIGNAL NAME.
34 - 35      WIRE NUMBER IN CHAIN FOR SIGNAL
36 - 42      NAME OF PIN WRAPPED BY A TOOL
43 - 49      NAME OF PIN WRAPPED BY B TOOL
50      WIRE PATTERN CODE NUMBER
51      TABLE ROTATIONAL POSITION
52      PALLET LONGITUDINAL POSITION
53      A TOOL Z LEVEL
54      B TOOL Z LEVEL
55 - 57      A TOOL X, IN DECIMAL
58 - 60      Y1, IN DECIMAL
59 - 63      B TOOL X, IN DECIMAL
64 - 66      Y2, IN DECIMAL
67 - 69      Y3, IN DECIMAL
70 - 72      Y4, IN DECIMAL
73 - 79      NASA DRAWING NUMBER OF COVER SHEET FOR DECK
80      REVISION LETTER TO DRAWING NUMBER

```

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		QTY REQD	
				LIST OF MATERIALS			
M.I.T. INSTRUMENTATION LAB CHAMBERS, MASS. TOLERANCES ON FRACTIONS = DECIMALS = ANGLES = DO NOT SCALE THIS DRAWING MATERIAL.				MAINED SPACECRAFT CENTER HOUSTON, TEXAS  WIREWRAP CARD DECK - TRAY A			
NEXT ASSY		USED ON		DRAWN BY <u>E.F. Miller</u> DATE <u>12/24/66</u> CHECKED BY <u>J. B. Miller</u> <u>12/24/66</u> APPROVAL <u>E. C. Smith</u> <u>1/10/67</u> APPROVAL <u>E. C. Smith</u> <u>1/10/67</u>		CODE IDENT NO. SIZE _____ <b>D</b>	
APPLICATION		FINAL FINISH		NASA APPROVAL <u>Michael</u> <u>1/10/67</u> NASA APPROVAL <u>W.K. Hughes</u> <u>1/10/67</u>		NASA DRAWING NO. <b>1005778</b>	
				SCALE NONE		SHEET 1 OF 4	



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		FIND NO.
LIST OF MATERIALS				
MIL INSTRUMENTATION LAB CANNESSE BAY POB. 82 HSTB3414		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN BY <i>W. K. ...</i> CHECKED BY <i>W. K. ...</i> APPROVAL <i>W. K. ...</i> APPROVAL <i>W. K. ...</i>		WIREWRAP CARD DECK-TRAY B		
NASA APPROVAL <i>W. K. ...</i>		CODE IDENT NO. D	NASA DRAWING NO. 1005779	
MIT APPROVAL <i>W. K. ...</i>		SCALE NONE	WT	SHEET 1 OF 1



[illegible]



ASSEMBLY INFORMATION CHART												
FROM	DESCRIPTION										TO	
REMARKS	COND	IDENT	STA NO.	DES	COLOR	AWG	FIND NO.	STA NO.	DES	REMARKS		
			15	P4-436	YEL	26		99	P4-235			
A1			16	-437	RED			99	-236			
			15	-336	YEL			99	-197			
			16	-337	RED			99	-198			
A2			13	-434	YEL			99	-163			
			14	-435	RED			99	-164			
			13	-334	YEL			99	-130			
			14	-335	RED			98	-131			
A5			17	-136	YEL			99	-97			
			18	-139	RED			99	-98			
			13	-234	YEL			99	-264			
			14	-235	RED			99	-265			
			5	-134	YEL			99	-330			
			16	-135	RED			98	-31			
			5	-236	YEL				-237			
			16	-237	RED				-238			
			5	-136	YEL				-199			
A3			16	-137	RED				-200			
			17	-238	YEL				-165			
			18	-239	RED				-166			
A11			23	-316	YEL				-132			
			26	-341	RED				-133			
			23	-244	YEL				-99			
A12			26	-247	RED				-100			
			17	-430	YEL				-66			
A13			18	-431	RED				-67			
			17	-338	YEL				-32			
A14			18	-339	RED				-33			
			10	-440	YEL				-239			
A15			20	-441	RED				-240			
			19	-340	YEL				-201			
A16			20	-341	RED				-202			
			19	-240	YEL				-167			
A17			20	-241	RED				-168			
			19	-140	YEL			98	-134			
A18			20	-141	RED			97	-135			
			25	-446	YEL			98	-101			
A19			26	-447	RED			98	-102			
			21	-442	YEL			98	-168			
A20			22	-443	RED			97	-69			
			21	-342	YEL			98	-34			
A21			22	-343	RED			97	-35			
			21	-242	YEL				-241			
A22			22	-243	RED				-242			
			21	-142	YEL				-203			
A23			22	-143	RED				-204			
			23	-444	YEL				-169			
A24			24	-445	RED				-170			
			23	-344	YEL				-136			
A25			24	-345	RED				-137			
			23	-244	YEL				-103			
A26			24	-245	RED				-104			
			23	-144	YEL				-70			
A27			24	-145	RED				-71			
			8	-229	YEL				-205			
A28			9	-223	RED				-206			
			19	-540	YEL				-105			
A29			20	-541	RED				-72			
			27	-149	YEL				-171			
A30			27	-150	RED				-172			
			10	-424	YEL			100	-230			
A31			11	-425	RED				-231			
			10	-324	YEL				-190			
A32			11	-325	RED				-191			
			8	-422	YEL				-156			
A33			9	-423	RED				-157			
			8	-322	YEL				-123			
A34			9	-323	RED				-124			
			2	-416	YEL				-56			
A35			3	-417	RED				-57			
			2	-316	YEL				-9			
A36			3	-317	RED				-59			
			2	-216	YEL				-24			
A37			3	-217	RED				-25			
			2	-116	YEL			100	-26			
A38			3	-117	RED				-27			
			4	-418	YEL				-232			
A39			5	-419	RED			99	-233			
			4	-318	YEL			100	-192			
			5	-319	RED				-193			
			8	-122	YEL				-158			
A41			9	-123	RED				-159			
			4	-218	YEL				-125			
A42			5	-219	RED				-126			
			4	-118	YEL				-92			
A43			5	P4-119	RED	26		100	PI-93			

ASSEMBLY INFORMATION CHART												
FROM			DESCRIPTION							TO		
REMARKS	COND	IDENT	STA NO.	DES	COLOR	AWG	FIND NO.	STA NO.	DES	REMARKS		
			A44	6	P4-420	YEL	26	2	100	PI-194	PART OF GROUP 1 SEE DETAIL A	
				7	-421	RED			99	PI-195		
			A45	6	-320	YEL			100	-160	GROUP 2 SEE DETAIL B	
				7	-321	RED			99	-161		
			A46	6	-220	YEL			99	-127	GROUP 2 SEE DETAIL B	
				7	-221	RED			99	-128		
			A47	6	-120	YEL			100	-94	GROUP 2 SEE DETAIL B	
				7	-121	RED			99	-95		
			A48	10	-224	YEL			100	-60	GROUP 2 SEE DETAIL B	
				11	-225	RED			99	-61		
			A49	10	-124	YEL			99	-28	GROUP 2 SEE DETAIL B	
				11	-125	RED		2	99	-29		
			A50	1	-603	YEL			104	-108	GROUP 2 SEE DETAIL B	
			A51	1	-503				104	-40		
			A52	1	-502				104	-174	GROUP 2 SEE DETAIL B	
			A53	12	-227				99	-96		
			A54	12	-327				99	-62	GROUP 2 SEE DETAIL B	
			A55	12	-127				99	-63		
			A56	12	P4-226	YEL	26	1	99	PI-234	GROUP 2 SEE DETAIL B	
					E2	SHLD			E1			
			A57	28	P4-SHBL	SHLD		25	99	GRD	GROUP 2 SEE DETAIL B	
			A58		E32	SHLD		25	105	GRD		
											GROUP 2 SEE DETAIL B	
			A59	34	P4-114	YEL	26		102	PI-47		
				35	-315	RED			101	-48	GROUP 2 SEE DETAIL B	
			A60	34	-214	YEL			102	-115		
				29	-504	RED		2	101	-116	GROUP 2 SEE DETAIL B	
			A61	36	-627	YEL		1	100	-17		
			A62	37	-328				101	-119	GROUP 2 SEE DETAIL B	
			A63	38	-329				101	-86		
			A64	39	-330				100	-88	GROUP 2 SEE DETAIL B	
			A65	40	-331				99	-54		
			A66	38	-229				99	-16	GROUP 2 SEE DETAIL B	
			A67	39	-230				99	-18		
			A68	40	-231				100	-20	GROUP 2 SEE DETAIL B	
			A69	38	-129				101	-152		
			A70	39	-130				100	-154	GROUP 2 SEE DETAIL B	
			A71	40	-131				99	-158		
			A72	41	-332					-222	GROUP 2 SEE DETAIL B	
			A73	41	-232					-224		
			A74	41	-132					-226	GROUP 2 SEE DETAIL B	
			A75	41	-133					-228		
			A76	37	-128				100	-181	GROUP 2 SEE DETAIL B	
			A77	30	-310				103	-210		
			A78	30	-210					-175	GROUP 2 SEE DETAIL B	
			A79	31	-611					-142		
			A80		-511					-109	GROUP 2 SEE DETAIL B	
			A81		-411					-76		
			A82		-311					-61	GROUP 2 SEE DETAIL B	
			A83		-211					-4		
			A84	31	-111					-218	GROUP 2 SEE DETAIL B	
			A85	32	-612					-177		
			A86		-512					-144	GROUP 2 SEE DETAIL B	
			A87		-412					-111		
			A88		-312					-78	GROUP 2 SEE DETAIL B	
			A89		-212					-43		
			A90	32	-112				103	-6	GROUP 2 SEE DETAIL B	
			A91	33	-613				106	-214		
			A92	33	-513					-179	GROUP 2 SEE DETAIL B	
			A93	34	-614					-8		
			A94		-514					-216	GROUP 2 SEE DETAIL B	
			A95		-414					-181		
			A96	34	-314					-148	GROUP 2 SEE DETAIL B	
			A97	33	-413					-146		
			A98		-313					-113	GROUP 2 SEE DETAIL B	
			A99		-213					-60		
			A100	33	-113				102	-68	GROUP 2 SEE DETAIL B	
			A101	30	-610				104	-75		
			A102		-110					-209	GROUP 2 SEE DETAIL B	
			A103		-410					-141		
			A104	30	P4-610	YEL	26	1	104	PI-3	GROUP 2 SEE DETAIL B	
					E6	SHLD			E8			
			A105		E5	BLK	22	3	100	PI-33	GROUP 2 SEE DETAIL B	
			A106						106	-1		
			A107						100	-22	GROUP 2 SEE DETAIL B	
			A108		E5	BLK	22	3	104	PI-107		

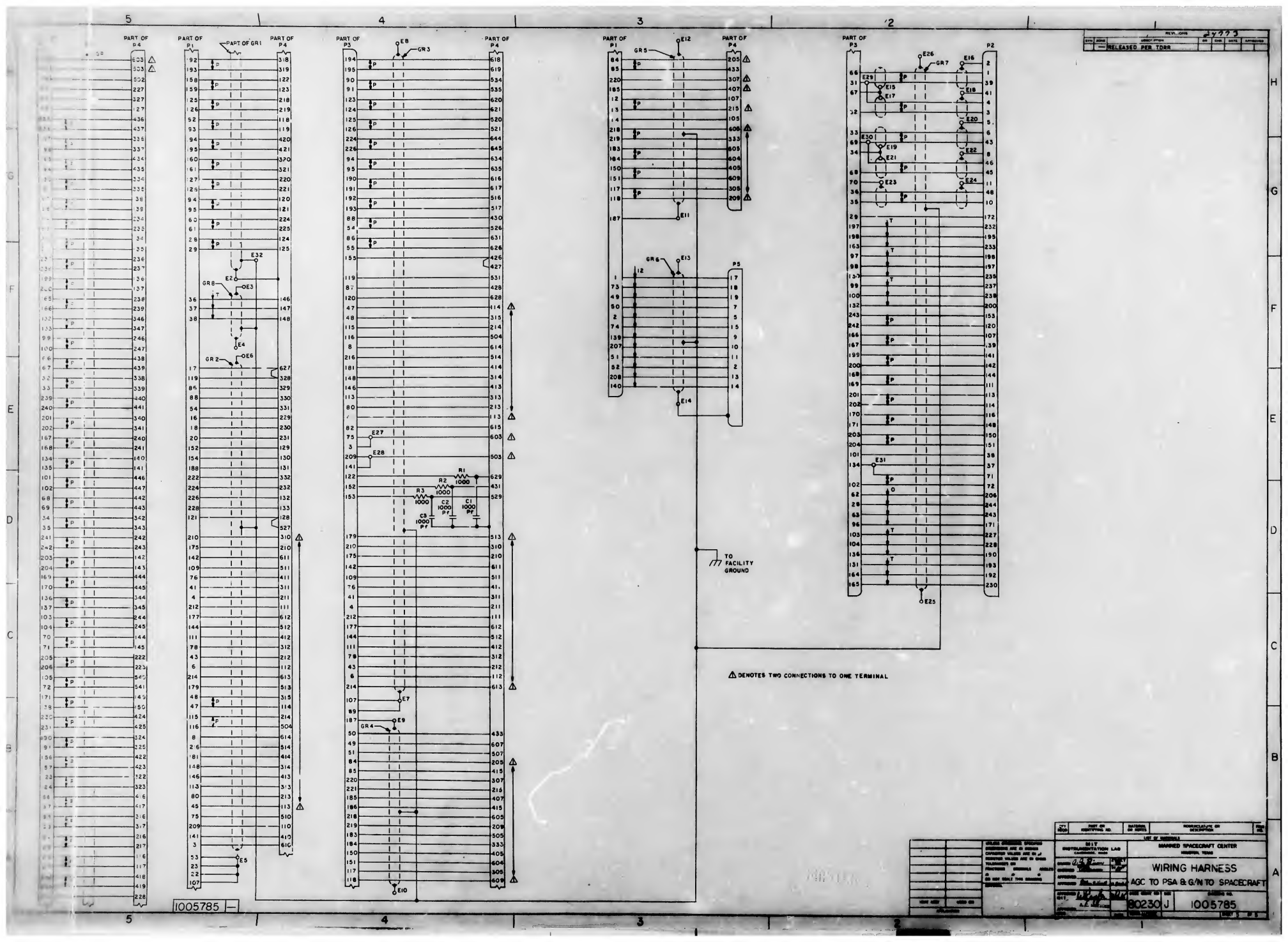
ASSEMBLY INFORMATION CHART												
FROM			DESCRIPTION					TO				
HAPPY'S	CHRD IDENT	STA NO	DES	COLOR	AWG	FIND NO	STA NO	DES	REMARKS			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	A181	72	P4-20X	YEL	26	2	101	P1-B4	SEE DETAIL E GROUP 5 SEE DETAIL F GROUP 6 PART OF GROUP 7 SEE DETAIL G GROUP 7 PART OF GROUP 7 SEE DETAIL H GROUP 8 PART OF GROUP 8 SEE DETAIL I GROUP 9 PART OF GROUP 9 SEE DETAIL J GROUP 10 PART OF GROUP 10 SEE DETAIL K GROUP 11 PART OF GROUP 11 SEE DETAIL L GROUP 12 PART OF GROUP 12 SEE DETAIL M GROUP 13 PART OF GROUP 13 SEE DETAIL N GROUP 14 PART OF GROUP 14 SEE DETAIL O GROUP 15 PART OF GROUP 15 SEE DETAIL P GROUP 16 PART OF GROUP 16 SEE DETAIL Q GROUP 17 PART OF GROUP 17 SEE DETAIL R GROUP 18 PART OF GROUP 18 SEE DETAIL S GROUP 19 PART OF GROUP 19 SEE DETAIL T GROUP 20 PART OF GROUP 20 SEE DETAIL U GROUP 21 PART OF GROUP 21 SEE DETAIL V GROUP 22 PART OF GROUP 22 SEE DETAIL W GROUP 23 PART OF GROUP 23 SEE DETAIL X GROUP 24 PART OF GROUP 24 SEE DETAIL Y GROUP 25 PART OF GROUP 25 SEE DETAIL Z GROUP 26 PART OF GROUP 26 SEE DETAIL AA GROUP 27 PART OF GROUP 27 SEE DETAIL AB GROUP 28 PART OF GROUP 28 SEE DETAIL AC GROUP 29 PART OF GROUP 29 SEE DETAIL AD GROUP 30 PART OF GROUP 30 SEE DETAIL AE GROUP 31 PART OF GROUP 31 SEE DETAIL AF GROUP 32 PART OF GROUP 32 SEE DETAIL AG GROUP 33 PART OF GROUP 33 SEE DETAIL AH GROUP 34 PART OF GROUP 34 SEE DETAIL AI GROUP 35 PART OF GROUP 35 SEE DETAIL AJ GROUP 36 PART OF GROUP 36 SEE DETAIL AK GROUP 37 PART OF GROUP 37 SEE DETAIL AL GROUP 38 PART OF GROUP 38 SEE DETAIL AM GROUP 39 PART OF GROUP 39 SEE DETAIL AN GROUP 40 PART OF GROUP 40 SEE DETAIL AO GROUP 41 PART OF GROUP 41 SEE DETAIL AP GROUP 42 PART OF GROUP 42 SEE DETAIL AQ GROUP 43 PART OF GROUP 43 SEE DETAIL AR GROUP 44 PART OF GROUP 44 SEE DETAIL AS GROUP 45 PART OF GROUP 45 SEE DETAIL AT GROUP 46 PART OF GROUP 46 SEE DETAIL AU GROUP 47 PART OF GROUP 47 SEE DETAIL AV GROUP 48 PART OF GROUP 48 SEE DETAIL AW GROUP 49 PART OF GROUP 49 SEE DETAIL AX GROUP 50 PART OF GROUP 50 SEE DETAIL AY GROUP 51 PART OF GROUP 51 SEE DETAIL AZ GROUP 52 PART OF GROUP 52 SEE DETAIL BA GROUP 53 PART OF GROUP 53 SEE DETAIL BB GROUP 54 PART OF GROUP 54 SEE DETAIL BC GROUP 55 PART OF GROUP 55 SEE DETAIL BD GROUP 56 PART OF GROUP 56 SEE DETAIL BE GROUP 57 PART OF GROUP 57 SEE DETAIL BF GROUP 58 PART OF GROUP 58 SEE DETAIL BG GROUP 59 PART OF GROUP 59 SEE DETAIL BH GROUP 60 PART OF GROUP 60 SEE DETAIL BI GROUP 61 PART OF GROUP 61 SEE DETAIL BJ GROUP 62 PART OF GROUP 62 SEE DETAIL BK GROUP 63 PART OF GROUP 63 SEE DETAIL BL GROUP 64 PART OF GROUP 64 SEE DETAIL BM GROUP 65 PART OF GROUP 65 SEE DETAIL BN GROUP 66 PART OF GROUP 66 SEE DETAIL BO GROUP 67 PART OF GROUP 67 SEE DETAIL BP GROUP 68 PART OF GROUP 68 SEE DETAIL BQ GROUP 69 PART OF GROUP 69 SEE DETAIL BR GROUP 70 PART OF GROUP 70 SEE DETAIL BS GROUP 71 PART OF GROUP 71 SEE DETAIL BT GROUP 72 PART OF GROUP 72 SEE DETAIL BU GROUP 73 PART OF GROUP 73 SEE DETAIL BV GROUP 74 PART OF GROUP 74 SEE DETAIL BW GROUP 75 PART OF GROUP 75 SEE DETAIL BX GROUP 76 PART OF GROUP 76 SEE DETAIL BY GROUP 77 PART OF GROUP 77 SEE DETAIL BZ GROUP 78 PART OF GROUP 78 SEE DETAIL CA GROUP 79 PART OF GROUP 79 SEE DETAIL CB GROUP 80 PART OF GROUP 80 SEE DETAIL CC GROUP 81 PART OF GROUP 81 SEE DETAIL CD GROUP 82 PART OF GROUP 82 SEE DETAIL CE GROUP 83 PART OF GROUP 83 SEE DETAIL CF GROUP 84 PART OF GROUP 84 SEE DETAIL CG GROUP 85 PART OF GROUP 85 SEE DETAIL CH GROUP 86 PART OF GROUP 86 SEE DETAIL CI GROUP 87 PART OF GROUP 87 SEE DETAIL CJ GROUP 88 PART OF GROUP 88 SEE DETAIL CK GROUP 89 PART OF GROUP 89 SEE DETAIL CL GROUP 90 PART OF GROUP 90 SEE DETAIL CM GROUP 91 PART OF GROUP 91 SEE DETAIL CN GROUP 92 PART OF GROUP 92 SEE DETAIL CO GROUP 93 PART OF GROUP 93 SEE DETAIL CP GROUP 94 PART OF GROUP 94 SEE DETAIL CQ GROUP 95 PART OF GROUP 95 SEE DETAIL CR GROUP 96 PART OF GROUP 96 SEE DETAIL CS GROUP 97 PART OF GROUP 97 SEE DETAIL CT GROUP 98 PART OF GROUP 98 SEE DETAIL CU GROUP 99 PART OF GROUP 99 SEE DETAIL CV GROUP 100 PART OF GROUP 100 SEE DETAIL CW GROUP 101 PART OF GROUP 101 SEE DETAIL CX GROUP 102 PART OF GROUP 102 SEE DETAIL CY GROUP 103 PART OF GROUP 103 SEE DETAIL CZ GROUP 104 PART OF GROUP 104 SEE DETAIL DA GROUP 105 PART OF GROUP 105 SEE DETAIL DB GROUP 106 PART OF GROUP 106 SEE DETAIL DC GROUP 107 PART OF GROUP 107 SEE DETAIL DD GROUP 108 PART OF GROUP 108 SEE DETAIL DE GROUP 109 PART OF GROUP 109 SEE DETAIL DF GROUP 110 PART OF GROUP 110 SEE DETAIL DG GROUP 111 PART OF GROUP 111 SEE DETAIL DH GROUP 112 PART OF GROUP 112 SEE DETAIL DI GROUP 113 PART OF GROUP 113 SEE DETAIL DJ GROUP 114 PART OF GROUP 114 SEE DETAIL DK GROUP 115 PART OF GROUP 115 SEE DETAIL DL GROUP 116 PART OF GROUP 116 SEE DETAIL DM GROUP 117 PART OF GROUP 117 SEE DETAIL DN GROUP 118 PART OF GROUP 118 SEE DETAIL DO GROUP 119 PART OF GROUP 119 SEE DETAIL DP GROUP 120 PART OF GROUP 120 SEE DETAIL DQ GROUP 121 PART OF GROUP 121 SEE DETAIL DR GROUP 122 PART OF GROUP 122 SEE DETAIL DS GROUP 123 PART OF GROUP 123 SEE DETAIL DT GROUP 124 PART OF GROUP 124 SEE DETAIL DU GROUP 125 PART OF GROUP 125 SEE DETAIL DV GROUP 126 PART OF GROUP 126 SEE DETAIL DW GROUP 127 PART OF GROUP 127 SEE DETAIL DX GROUP 128 PART OF GROUP 128 SEE DETAIL DY GROUP 129 PART OF GROUP 129 SEE DETAIL DZ GROUP 130 PART OF GROUP 130 SEE DETAIL EA GROUP 131 PART OF GROUP 131 SEE DETAIL EB GROUP 132 PART OF GROUP 132 SEE DETAIL EC GROUP 133 PART OF GROUP 133 SEE DETAIL ED GROUP 134 PART OF GROUP 134 SEE DETAIL EE GROUP 135 PART OF GROUP 135 SEE DETAIL EF GROUP 136 PART OF GROUP 136 SEE DETAIL EG GROUP 137 PART OF GROUP 137 SEE DETAIL EH GROUP 138 PART OF GROUP 138 SEE DETAIL EI GROUP 139 PART OF GROUP 139 SEE DETAIL EJ GROUP 140 PART OF GROUP 140 SEE DETAIL EK GROUP 141 PART OF GROUP 141 SEE DETAIL EL GROUP 142 PART OF GROUP 142 SEE DETAIL EM GROUP 143 PART OF GROUP 143 SEE DETAIL EN GROUP 144 PART OF GROUP 144 SEE DETAIL EO GROUP 145 PART OF GROUP 145 SEE DETAIL EP GROUP 146 PART OF GROUP 146 SEE DETAIL EQ GROUP 147 PART OF GROUP 147 SEE DETAIL ER GROUP 148 PART OF GROUP 148 SEE DETAIL ES GROUP 149 PART OF GROUP 149 SEE DETAIL ET GROUP 150 PART OF GROUP 150 SEE DETAIL EU GROUP 151 PART OF GROUP 151 SEE DETAIL EV GROUP 152 PART OF GROUP 152 SEE DETAIL EW GROUP 153 PART OF GROUP 153 SEE DETAIL EX GROUP 154 PART OF GROUP 154 SEE DETAIL EY GROUP 155 PART OF GROUP 155 SEE DETAIL EZ GROUP 156 PART OF GROUP 156 SEE DETAIL FA GROUP 157 PART OF GROUP 157 SEE DETAIL FB GROUP 158 PART OF GROUP 158 SEE DETAIL FC GROUP 159 PART OF GROUP 159 SEE DETAIL FD GROUP 160 PART OF GROUP 160 SEE DETAIL FE GROUP 161 PART OF GROUP 161 SEE DETAIL FF GROUP 162 PART OF GROUP 162 SEE DETAIL FG GROUP 163 PART OF GROUP 163 SEE DETAIL FH GROUP 164 PART OF GROUP 164 SEE DETAIL FI GROUP 165 PART OF GROUP 165 SEE DETAIL FJ GROUP 166 PART OF GROUP 166 SEE DETAIL FK GROUP 167 PART OF GROUP 167 SEE DETAIL FL GROUP 168 PART OF GROUP 168 SEE DETAIL FM GROUP 169 PART OF GROUP 169 SEE DETAIL FN GROUP 170 PART OF GROUP 170 SEE DETAIL FO GROUP 171 PART OF GROUP 171 SEE DETAIL FP GROUP 172 PART OF GROUP 172 SEE DETAIL FQ GROUP 173 PART OF GROUP 173 SEE DETAIL FR GROUP 174 PART OF GROUP 174 SEE DETAIL FS GROUP 175 PART OF GROUP 175 SEE DETAIL FT GROUP 176 PART OF GROUP 176 SEE DETAIL FU GROUP 177 PART OF GROUP 177 SEE DETAIL FV GROUP 178 PART OF GROUP 178 SEE DETAIL FW GROUP 179 PART OF GROUP 179 SEE DETAIL FX GROUP 180 PART OF GROUP 180 SEE DETAIL FY GROUP 181 PART OF GROUP 181 SEE DETAIL FZ GROUP 182 PART OF GROUP 182 SEE DETAIL GA GROUP 183 PART OF GROUP 183 SEE DETAIL GB GROUP 184 PART OF GROUP 184 SEE DETAIL GC GROUP 185 PART OF GROUP 185 SEE DETAIL GD GROUP 186 PART OF GROUP 186 SEE DETAIL GE GROUP 187 PART OF GROUP 187 SEE DETAIL GF GROUP 188 PART OF GROUP 188 SEE DETAIL GG GROUP 189 PART OF GROUP 189 SEE DETAIL GH GROUP 190 PART OF GROUP 190 SEE DETAIL GI GROUP 191 PART OF GROUP 191 SEE DETAIL GJ GROUP 192 PART OF GROUP 192 SEE DETAIL GK GROUP 193 PART OF GROUP 193 SEE DETAIL GL GROUP 194 PART OF GROUP 194 SEE DETAIL GM GROUP 195 PART OF GROUP 195 SEE DETAIL GN GROUP 196 PART OF GROUP 196 SEE DETAIL GO GROUP 197 PART OF GROUP 197 SEE DETAIL GP GROUP 198 PART OF GROUP 198 SEE DETAIL GQ GROUP 199 PART OF GROUP 199 SEE DETAIL GR GROUP 200 PART OF GROUP 200 SEE DETAIL GS GROUP 201 PART OF GROUP 201 SEE DETAIL GT GROUP 202 PART OF GROUP 202 SEE DETAIL GU GROUP 203 PART OF GROUP 203 SEE DETAIL GV GROUP 204 PART OF GROUP 204 SEE DETAIL GW GROUP 205 PART OF GROUP 205 SEE DETAIL GX GROUP 206 PART OF GROUP 206 SEE DETAIL GY GROUP 207 PART OF GROUP 207 SEE DETAIL GZ GROUP 208 PART OF GROUP 208 SEE DETAIL HA GROUP 209 PART OF GROUP 209 SEE DETAIL HB GROUP 210 PART OF GROUP 210 SEE DETAIL HC GROUP 211 PART OF GROUP 211 SEE DETAIL HD GROUP 212 PART OF GROUP 212 SEE DETAIL HE GROUP 213 PART OF GROUP 213 SEE DETAIL HF GROUP 214 PART OF GROUP 214 SEE DETAIL HG GROUP 215 PART OF GROUP 215 SEE DETAIL HH GROUP 216 PART OF GROUP 216 SEE DETAIL HI GROUP 217 PART OF GROUP 217 SEE DETAIL HJ GROUP 218 PART OF GROUP 218 SEE DETAIL HK GROUP 219 PART OF GROUP 219 SEE DETAIL HL GROUP 220 PART OF GROUP 220 SEE DETAIL HM GROUP 221 PART OF GROUP 221 SEE DETAIL HN GROUP 222 PART OF GROUP 222 SEE DETAIL HO GROUP 223 PART OF GROUP 223 SEE DETAIL HP GROUP 224 PART OF GROUP 224 SEE DETAIL HQ GROUP 225 PART OF GROUP 225 SEE DETAIL HR GROUP 226 PART OF GROUP 226 SEE DETAIL HS GROUP 227 PART OF GROUP 227 SEE DETAIL HT GROUP 228 PART OF GROUP 228 SEE DETAIL HU GROUP 229 PART OF GROUP 229 SEE DETAIL HV GROUP 230 PART OF GROUP 230 SEE DETAIL HW GROUP 231 PART OF GROUP 231 SEE DETAIL HX GROUP 232 PART OF GROUP 232 SEE DETAIL HY GROUP 233 PART OF GROUP 233 SEE DETAIL HZ GROUP 234 PART OF GROUP 234 SEE DETAIL IA GROUP 235 PART OF GROUP 235 SEE DETAIL IB GROUP 236 PART OF GROUP 236 SEE DETAIL IC GROUP 237 PART OF GROUP 237 SEE DETAIL ID GROUP 238 PART OF GROUP 238 SEE DETAIL IE GROUP 239 PART OF GROUP 239 SEE DETAIL IF GROUP 240 PART OF GROUP 240 SEE DETAIL IG GROUP 241 PART OF GROUP 241 SEE DETAIL IH GROUP 242 PART OF GROUP 242 SEE DETAIL II GROUP 243 PART OF GROUP 243 SEE DETAIL IJ GROUP 244 PART OF GROUP 244 SEE DETAIL IK GROUP 245 PART OF GROUP 245 SEE DETAIL IL GROUP 246 PART OF GROUP 246 SEE DETAIL IM GROUP 247 PART OF GROUP 247 SEE DETAIL IN GROUP 248 PART OF GROUP 248 SEE DETAIL IO GROUP 249 PART OF GROUP 249 SEE DETAIL IP GROUP 250 PART OF GROUP 250 SEE DETAIL IQ GROUP 251 PART OF GROUP 251 SEE DETAIL IR GROUP 252 PART OF GROUP 252 SEE DETAIL IS GROUP 253 PART OF GROUP 253 SEE DETAIL IT GROUP 254 PART OF GROUP 254 SEE DETAIL IU GROUP 255 PART OF GROUP 255 SEE DETAIL IV GROUP 256 PART OF GROUP 256 SEE DETAIL IW GROUP 257 PART OF GROUP 257 SEE DETAIL IX GROUP 258 PART OF GROUP 258 SEE DETAIL IY GROUP 259 PART OF GROUP 259 SEE DETAIL IZ GROUP 260 PART OF GROUP 260 SEE DETAIL JA GROUP 261 PART OF GROUP 261 SEE DETAIL JB GROUP 262 PART OF GROUP 262 SEE DETAIL JC GROUP 263 PART OF GROUP 263 SEE DETAIL JD GROUP 264 PART OF GROUP 264 SEE DETAIL JE GROUP 265 PART OF GROUP 265 SEE DETAIL JF GROUP 266 PART OF GROUP 266 SEE DETAIL JG GROUP 267 PART OF GROUP 267 SEE DETAIL JH GROUP 268 PART OF GROUP 268 SEE DETAIL JI GROUP 269 PART OF GROUP 269 SEE DETAIL JJ GROUP 270 PART OF GROUP 270 SEE DETAIL JK GROUP 271 PART OF GROUP 271 SEE DETAIL JL GROUP 272 PART OF GROUP 272 SEE DETAIL JM GROUP 273 PART OF GROUP 273 SEE DETAIL JN GROUP 274 PART OF GROUP 274 SEE DETAIL JO GROUP 275 PART OF GROUP 275 SEE DETAIL JP GROUP 276 PART OF GROUP 276 SEE DETAIL JQ GROUP 277 PART OF GROUP 277 SEE DETAIL JR GROUP 278 PART OF GROUP 278 SEE DETAIL JS GROUP 279 PART OF GROUP 279 SEE DETAIL JT GROUP 280 PART OF GROUP 280 SEE DETAIL JU GROUP 281 PART OF GROUP 281 SEE DETAIL JV GROUP 282 PART OF GROUP 282 SEE DETAIL JW GROUP 283 PART OF GROUP 283 SEE DETAIL JX GROUP 284 PART OF GROUP 284 SEE DETAIL JY GROUP 285 PART OF GROUP 285 SEE DETAIL JZ GROUP 286 PART OF GROUP 286 SEE DETAIL KA GROUP 287 PART OF GROUP 287 SEE DETAIL KB GROUP 288 PART OF GROUP 288 SEE DETAIL KC GROUP 289 PART OF GROUP 289 SEE DETAIL KD GROUP 290 PART OF GROUP 290 SEE DETAIL KE GROUP 291 PART OF GROUP 291 SEE DETAIL KF GROUP 292 PART OF GROUP 292 SEE DETAIL KG GROUP 293 PART OF GROUP 293 SEE DETAIL KH GROUP 294 PART OF GROUP 294 SEE DETAIL KI GROUP 295 PART OF GROUP 295 SEE DETAIL KJ GROUP 296 PART OF GROUP 296 SEE DETAIL KK GROUP 297 PART OF GROUP 297 SEE DETAIL KL GROUP 298 PART OF GROUP 298 SEE DETAIL KM GROUP 299 PART OF GROUP 299 SEE DETAIL KN GROUP 300 PART OF GROUP 300 SEE DETAIL KO GROUP 301 PART OF GROUP 301 SEE DETAIL KP GROUP 302 PART OF GROUP 302 SEE DETAIL KQ GROUP 303 PART OF GROUP 303 SEE DETAIL KR GROUP 304 PART OF GROUP 304 SEE DETAIL KS GROUP 305 PART OF GROUP 305 SEE DETAIL KT GROUP 306 PART OF GROUP 306 SEE DETAIL KU GROUP 307 PART OF GROUP 307 SEE DETAIL KV GROUP 308 PART OF GROUP 308 SEE DETAIL KW GROUP 309 PART OF GROUP 309 SEE DETAIL KX GROUP 310 PART OF GROUP 310 SEE DETAIL KY GROUP 311 PART OF GROUP 311 SEE DETAIL KZ GROUP 312 PART OF GROUP 312 SEE DETAIL LA GROUP 313 PART OF GROUP 313 SEE DETAIL LB GROUP 314 PART OF GROUP 314 SEE DETAIL LC GROUP 315 PART OF GROUP 315 SEE DETAIL LD GROUP 316 PART OF GROUP 316 SEE DETAIL LE GROUP 317 PART OF GROUP 317 SEE DETAIL LF GROUP 318 PART OF GROUP 318 SEE DETAIL LG GROUP 319 PART OF GROUP 319 SEE DETAIL LH GROUP 320 PART OF GROUP 320 SEE DETAIL LI GROUP 321 PART OF GROUP 321 SEE DETAIL LJ GROUP 322 PART OF GROUP 322 SEE DETAIL LK GROUP 323 PART OF GROUP 323 SEE DETAIL LL GROUP 324 PART OF GROUP 324 SEE DETAIL LM GROUP 325 PART OF GROUP 325 SEE DETAIL LN GROUP 326 PART OF GROUP 326 SEE DETAIL LO GROUP 327 PART OF GROUP 327 SEE DETAIL LP GROUP 328 PART OF GROUP 328 SEE DETAIL LQ GROUP 329 PART OF GROUP 329 SEE DETAIL LR GROUP 330 PART OF GROUP 330 SEE DETAIL LS GROUP 331 PART OF GROUP 331 SEE DETAIL LT GROUP 332 PART OF GROUP 332 SEE DETAIL LU GROUP 333 PART OF GROUP 333 SEE DETAIL LV GROUP 334 PART OF GROUP 334 SEE DETAIL LW GROUP 335 PART OF GROUP 335 SEE DETAIL LX GROUP 336 PART OF GROUP 336 SEE DETAIL LY GROUP 337 PART OF GROUP 337 SEE DETAIL LZ GROUP 338 PART OF GROUP 338 SEE DETAIL MA GROUP 339 PART OF GROUP 339 SEE DETAIL MB GROUP 340 PART OF GROUP 340 SEE DETAIL MC GROUP 341 PART OF GROUP 341 SEE DETAIL MD GROUP 342 PART OF GROUP 342 SEE DETAIL ME GROUP 343 PART OF GROUP 343 SEE DETAIL MF GROUP 344 PART OF GROUP 344 SEE DETAIL MG GROUP 345 PART OF GROUP 345 SEE DETAIL MH GROUP 346 PART OF GROUP 346 SEE DETAIL MI GROUP 347 PART OF GROUP 347 SEE DETAIL MJ GROUP 348 PART OF GROUP 348 SEE DETAIL MK GROUP 349 PART OF GROUP 349 SEE DETAIL ML GROUP 350 PART OF GROUP 350 SEE DETAIL MN GROUP 351 PART OF GROUP 351 SEE DETAIL MO GROUP 352 PART OF GROUP 352 SEE DETAIL MP GROUP 353 PART OF GROUP 353 SEE DETAIL MQ GROUP 354 PART OF GROUP 354 SEE DETAIL MR GROUP 355 PART OF GROUP 355 SEE DETAIL MS GROUP 356 PART OF GROUP 356 SEE DETAIL MT GROUP 357 PART OF GROUP 357 SEE DETAIL MU GROUP 358 PART OF GROUP 358 SEE DETAIL MV GROUP 359 PART OF GROUP 359 SEE DETAIL MW GROUP 360 PART OF GROUP 360 SEE DETAIL MX GROUP 361 PART OF GROUP 361 SEE DETAIL MY GROUP 362 PART OF GROUP 362 SEE DETAIL MZ GROUP 363 PART OF GROUP 363 SEE DETAIL NA GROUP 364 PART OF GROUP 364 SEE DETAIL NB GROUP 365 PART OF GROUP 365 SEE DETAIL NC GROUP 366 PART OF GROUP 366 SEE DETAIL ND GROUP 367 PART OF GROUP 367 SEE DETAIL NE GROUP 368 PART OF GROUP 368 SEE DETAIL NF GROUP 369 PART OF GROUP 369 SEE DETAIL NG GROUP 370 PART OF GROUP 370 SEE DETAIL NH GROUP 371 PART OF GROUP 371 SEE DETAIL NI GROUP 372 PART OF GROUP 372 SEE DETAIL NJ GROUP 373 PART OF GROUP 373 SEE DETAIL NK GROUP 374 PART OF GROUP 374 SEE DETAIL NL GROUP 375 PART OF GROUP 375 SEE DETAIL NO GROUP 376 PART OF GROUP 376 SEE DETAIL NP GROUP 377 PART OF GROUP 377 SEE DETAIL NQ GROUP 378 PART OF GROUP 378 SEE DETAIL NR GROUP 379 PART OF GROUP 379 SEE DETAIL NS GROUP 380 PART OF GROUP 380 SEE DETAIL NT GROUP 381 PART OF GROUP 381 SEE DETAIL NU GROUP 382 PART OF GROUP 382 SEE DETAIL NV GROUP 383 PART OF GROUP 383 SEE DETAIL NW GROUP 384 PART OF GROUP 384 SEE DETAIL NX GROUP 385 PART OF GROUP 385 SEE DETAIL NY GROUP 386 PART OF GROUP 386 SEE DETAIL NZ GROUP 387 PART OF GROUP 387 SEE DETAIL OA GROUP 388 PART OF GROUP 388 SEE DETAIL OB GROUP 389 PART OF GROUP 389 SEE DETAIL OC GROUP 390 PART OF GROUP 390 SEE DETAIL OD GROUP 391 PART OF GROUP 391 SEE DETAIL OE GROUP 392 PART OF GROUP 392 SEE DETAIL OF GROUP 393 PART OF GROUP 393 SEE DETAIL OG GROUP 394 PART OF GROUP 394 SEE DETAIL OH GROUP 395 PART OF GROUP 395 SEE DETAIL OI GROUP 396 PART OF GROUP 396 SEE DETAIL OJ GROUP 397 PART OF GROUP 397 SEE DETAIL OK GROUP 398 PART OF GROUP 398 SEE DETAIL OL GROUP 399 PART OF GROUP 399 SEE DETAIL OM GROUP 400 PART OF GROUP 400 SEE DETAIL ON GROUP 401 PART OF GROUP 401 SEE DETAIL OO GROUP 402 PART OF GROUP 402 SEE DETAIL OP GROUP 403 PART OF GROUP 403 SEE DETAIL OQ GROUP 404 PART OF GROUP 404 SEE DETAIL OR GROUP 405 PART OF GROUP 405 SEE DETAIL OS GROUP 406 PART OF GROUP 406 SEE DETAIL OT GROUP 407 PART OF GROUP 407 SEE DETAIL OU GROUP 408 PART OF GROUP 408 SEE DETAIL OV GROUP 409 PART OF GROUP 409 SEE DETAIL OW GROUP 410 PART OF GROUP 410 SEE DETAIL OX GROUP 411 PART OF GROUP 411 SEE DETAIL OY GROUP 412 PART OF GROUP 412 SEE DETAIL OZ GROUP 413 PART OF GROUP 413 SEE DETAIL PA GROUP 414 PART OF GROUP 414 SEE DETAIL PB GROUP 415 PART OF GROUP 415 SEE DETAIL PC GROUP 416 PART OF GROUP 416 SEE DETAIL PD GROUP 417 PART OF GROUP 417 SEE DETAIL PE GROUP 418 PART OF GROUP 418 SEE DETAIL PF GROUP 419 PART OF GROUP 419 SEE DETAIL PG GROUP 420 PART OF GROUP 420 SEE DETAIL PH GROUP 421 PART OF GROUP 421 SEE DETAIL PI GROUP 422 PART OF GROUP 422 SEE DETAIL PJ GROUP 423 PART OF GROUP 423 SEE DETAIL PK GROUP 424 PART OF GROUP 424 SEE DETAIL PL GROUP 425 PART OF GROUP 425 SEE DETAIL PM GROUP 426 PART OF GROUP 426 SEE DETAIL PN GROUP 427 PART OF GROUP 427 SEE DETAIL PO GROUP 428 PART OF GROUP 428 SEE DETAIL PP GROUP 429 PART OF GROUP 429 SEE DETAIL PQ GROUP 430 PART OF GROUP 430 SEE DETAIL PR GROUP 431 PART OF GROUP 431 SEE DETAIL PS GROUP 432 PART OF GROUP 432 SEE DETAIL PT GROUP 433 PART OF GROUP 433 SEE DETAIL PU GROUP 434 PART OF GROUP 434 SEE DETAIL PV GROUP 435 PART OF GROUP 435 SEE DETAIL PW GROUP 436 PART OF GROUP 436 SEE DETAIL PX GROUP 437 PART OF GROUP 437 SEE DETAIL PY GROUP 438 PART OF GROUP 438 SEE DETAIL PZ GROUP 439 PART OF GROUP 439 SEE DETAIL QA GROUP 440 PART OF GROUP 440 SEE DETAIL QB GROUP 441 PART OF GROUP 441 SEE DETAIL QC GROUP 442 PART OF GROUP 442 SEE DETAIL QD GROUP 443 PART OF GROUP 443 SEE DETAIL QE GROUP 444 PART OF GROUP 444 SEE DETAIL QF GROUP 445 PART OF GROUP 445 SEE DETAIL QG GROUP 446 PART OF GROUP 446 SEE DETAIL QH GROUP 447 PART OF GROUP 447 SEE DETAIL QI GROUP 448 PART OF GROUP 448 SEE DETAIL QJ GROUP 449 PART OF GROUP 449 SEE DETAIL QK GROUP 450 PART OF GROUP 450 SEE DETAIL QL GROUP 451 PART OF GROUP 451 SEE DETAIL QM GROUP 452 PART OF GROUP 452 SEE DETAIL QN GROUP 453 PART OF GROUP 453 SEE DETAIL QO GROUP 454 PART OF GROUP 454 SEE DETAIL QP GROUP 455 PART OF GROUP 455 SEE DETAIL QQ GROUP 456 PART OF GROUP 456 SEE DETAIL QR GROUP 457 PART OF GROUP 457 SEE DETAIL QS GROUP 458 PART OF GROUP 458 SEE DETAIL QT GROUP 459 PART OF GROUP 459 SEE DETAIL QU GROUP 460 PART OF GROUP 460 SEE DETAIL QV GROUP 461 PART OF GROUP 461 SEE DETAIL QW GROUP 462 PART OF GROUP 462 SEE DETAIL QX GROUP 463 PART OF GROUP 463 SEE DETAIL QY GROUP 464 PART OF GROUP 464 SEE DETAIL QZ GROUP 465 PART OF GROUP 465 SEE DETAIL RA GROUP 466 PART OF GROUP 466 SEE DETAIL RB GROUP 467 PART OF GROUP 467 SEE DETAIL RC GROUP 468 PART OF GROUP 468 SEE DETAIL RD GROUP 469 PART OF GROUP 469 SEE DETAIL RE GROUP 470 PART OF GROUP 470 SEE DETAIL RF GROUP 471 PART OF GROUP 471 SEE DETAIL RG GROUP 472 PART OF GROUP 472 SEE DETAIL RH GROUP 473 PART OF GROUP 473 SEE DETAIL RI GROUP 474 PART OF GROUP 474 SEE DETAIL RJ GROUP 475 PART OF GROUP 475 SEE DETAIL RK GROUP 476 PART OF GROUP 476 SEE DETAIL RL GROUP 477 PART OF GROUP 477 SEE DETAIL RM GROUP 478 PART OF GROUP 478 SEE DETAIL RN GROUP 479 PART OF GROUP 479 SEE DETAIL RO GROUP 480 PART OF GROUP 480 SEE DETAIL RP GROUP 481 PART OF GROUP 481 SEE DETAIL RQ GROUP 482 PART OF GROUP 482 SEE DETAIL RR GROUP 483 PART OF GROUP 483 SEE DETAIL RS GROUP 484 PART OF GROUP 484 SEE DETAIL RT GROUP 485 PART OF GROUP 485 SEE DETAIL RU GROUP 486 PART OF GROUP 486 SEE DETAIL RV GROUP 487 PART OF GROUP 487 SEE DETAIL RW GROUP 488 PART OF GROUP 488 SEE DETAIL RX GROUP 489 PART OF GROUP 489 SEE DETAIL RY GROUP 490 PART OF GROUP 490 SEE DETAIL RZ GROUP 491 PART OF GROUP 491 SEE DETAIL SA GROUP 492 PART OF GROUP 492 SEE DETAIL SB GROUP 493 PART OF GROUP 493 SEE DETAIL SC GROUP 494 PART OF GROUP 494 SEE DETAIL SD GROUP 495 PART OF GROUP 495 SEE DETAIL SE GROUP 496 PART OF GROUP 496 SEE DETAIL SF GROUP 497 PART OF GROUP 497 SEE DETAIL SG GROUP 498 PART OF GROUP 498 SEE DETAIL SH GROUP 499 PART OF GROUP 499 SEE DETAIL SI GROUP 500 PART OF GROUP 500 SEE DETAIL SJ GROUP 501 PART OF GROUP 501 SEE DETAIL SK GROUP 502 PART OF GROUP 502 SEE DETAIL SL GROUP 503 PART OF GROUP 503 SEE DETAIL SM GROUP 504 PART OF GROUP 504 SEE DETAIL SN GROUP 505 PART OF GROUP 505 SEE DETAIL SO GROUP 506 PART OF GROUP 506 SEE DETAIL SP GROUP 507 PART OF GROUP 507 SEE DETAIL SQ GROUP 508 PART OF GROUP 508 SEE DETAIL SR GROUP 509 PART OF GROUP 509 SEE DETAIL SS GROUP 510 PART OF GROUP 510 SEE DETAIL ST GROUP 511 PART OF GROUP 511 SEE DETAIL SU GROUP 512 PART OF GROUP 512 SEE DETAIL SV GROUP 513 PART OF GROUP 513 SEE DETAIL SW GROUP 514 PART OF GROUP 514 SEE DETAIL SX GROUP 515 PART OF GROUP 515 SEE DETAIL SY GROUP 516 PART OF GROUP 516 SEE DETAIL SZ GROUP 517 PART OF GROUP 517 SEE DETAIL TA GROUP 518 PART OF GROUP 518 SEE DETAIL TB GROUP 519 PART OF GROUP 519 SEE DETAIL TC GROUP 520 PART OF GROUP 520 SEE DETAIL TD GROUP 521 PART OF GROUP 521 SEE DETAIL TE GROUP 522 PART OF GROUP 522 SEE DETAIL TF GROUP 523 PART OF GROUP 523 SEE DETAIL TG GROUP 524 PART OF GROUP 524 SEE DETAIL TH GROUP 525 PART OF GROUP 525 SEE DETAIL TI GROUP 526 PART OF GROUP 526 SEE DETAIL TJ GROUP 527 PART OF GROUP 527 SEE DETAIL TK GROUP 528 PART OF GROUP 528 SEE DETAIL TL GROUP 529 PART OF GROUP 529 SEE DETAIL TM GROUP 530 PART OF GROUP 530 SEE DETAIL TN GROUP 531 PART OF GROUP 531 SEE DETAIL TO GROUP 532 PART OF GROUP 532 SEE DETAIL TP GROUP 533 PART OF GROUP 533 SEE DETAIL TQ GROUP 534 PART OF GROUP 534 SEE DETAIL TR GROUP 535 PART OF GROUP 535 SEE DETAIL TS GROUP 536 PART OF GROUP 536 SEE DETAIL TU GROUP 537 PART OF GROUP 537 SEE DETAIL TV GROUP 538 PART OF GROUP 538 SEE DETAIL TW GROUP 539 PART OF GROUP 539 SEE DETAIL TX GROUP 540 PART OF GROUP 540 SEE DETAIL TY GROUP 541 PART OF GROUP 541 SEE DETAIL TZ GROUP 542 PART OF GROUP 542 SEE DETAIL UA GROUP 543 PART OF GROUP 543 SEE DETAIL UB GROUP 544 PART OF GROUP 544 SEE DETAIL UC GROUP 545 PART OF GROUP 545 SEE DETAIL UD GROUP 546 PART OF GROUP 546 SEE DET			

⚠ DENOTES TWO CONNECT ONE TO 1 TERMINAL  
⚠ DENOTES JUMPER

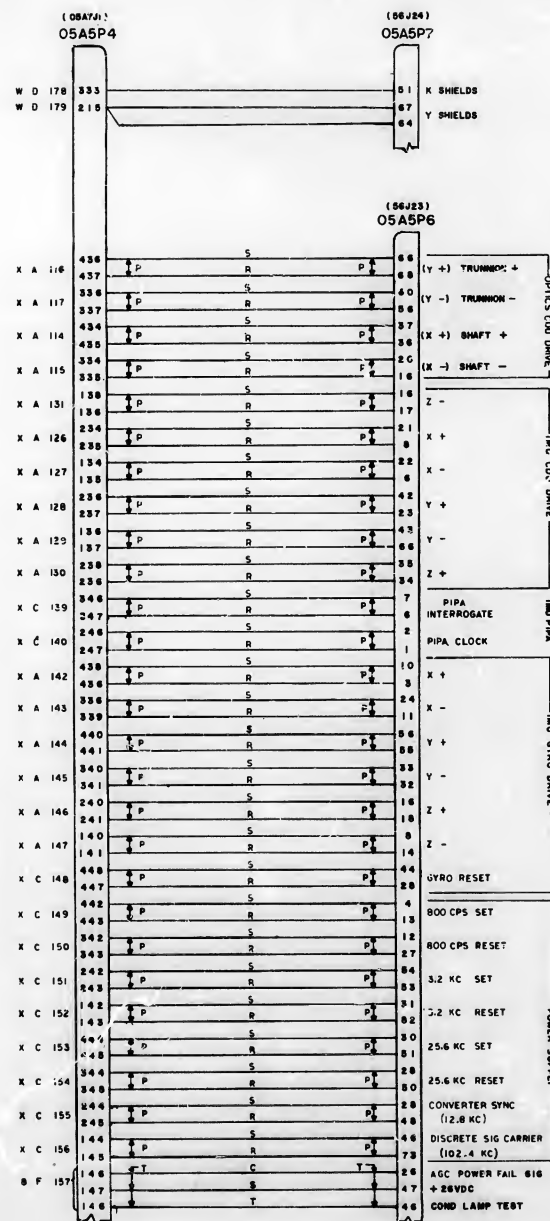
ASSEMBLY INFORMATION CHART												
FROM		DESCRIPTION						TO				
REMARKS	COND IDENT	STA	NO	DES	COLOR	AWG	FIND NO	STA	NO	DES	REMARKS	
	A222	89	P2-37		YEL	24				E31		
	A223	89	P2-172		YEL	24	10	81		P3-29	PART OF GROUP 7	
	A224	89	P2-38		YEL	24	10	80		P3-101	SEE DETAIL G	
			E25		SHLD					E25		
	A225	25	P4-146		YEL	24		97		P1-36	GROUP B	
	A226	26	P4-147		RED	24		97		P1-37	SEE DETAIL A	
	A227	27	P4-148		GRN	24	7	97		P1-38		
			E4		SHLD					E3		
	A228	E30	RED		26	4	81			P3-31		
	A229	E29	RED		25	4	80			P3-69		
	A230	E31	YEL		24	10	80			P3-134		
	A231	E15	BLK		22	3				E17		
	A232	E17						80		P3-67		
	A233	E19								E21		
	A234	E21						80		P3-34		
	A235	E23						80		P3-70		
	A236	95	P2-2							E16		
	A237	95	P2-41							E18		
	A238	95	P2-5							E20		
	A239	94	P2-9							E22		
	A240	93	P2-11		BLK	22	3			E24		
	A241		RLC1		YEL	24	10			P4-629		
	A242		R2,C2			24	10			-C21		
	A243		R2,C3			24	10			-B29		
	A244		P4-426			26	1			-B27		
	A245		P4-128			26	1			-B27		
	A246		P4-627		YEL	25	1			P4-328		

[illegible]





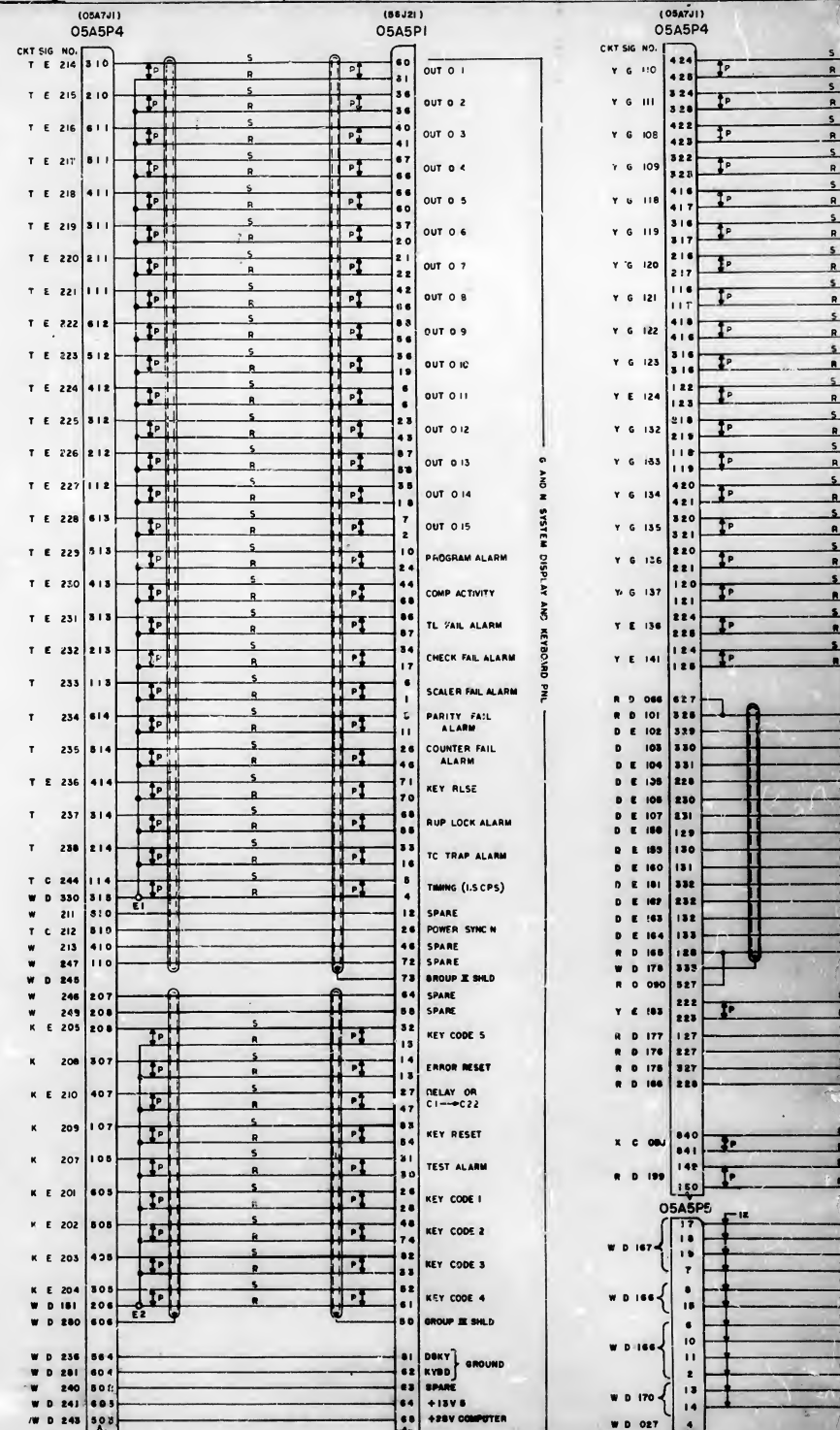


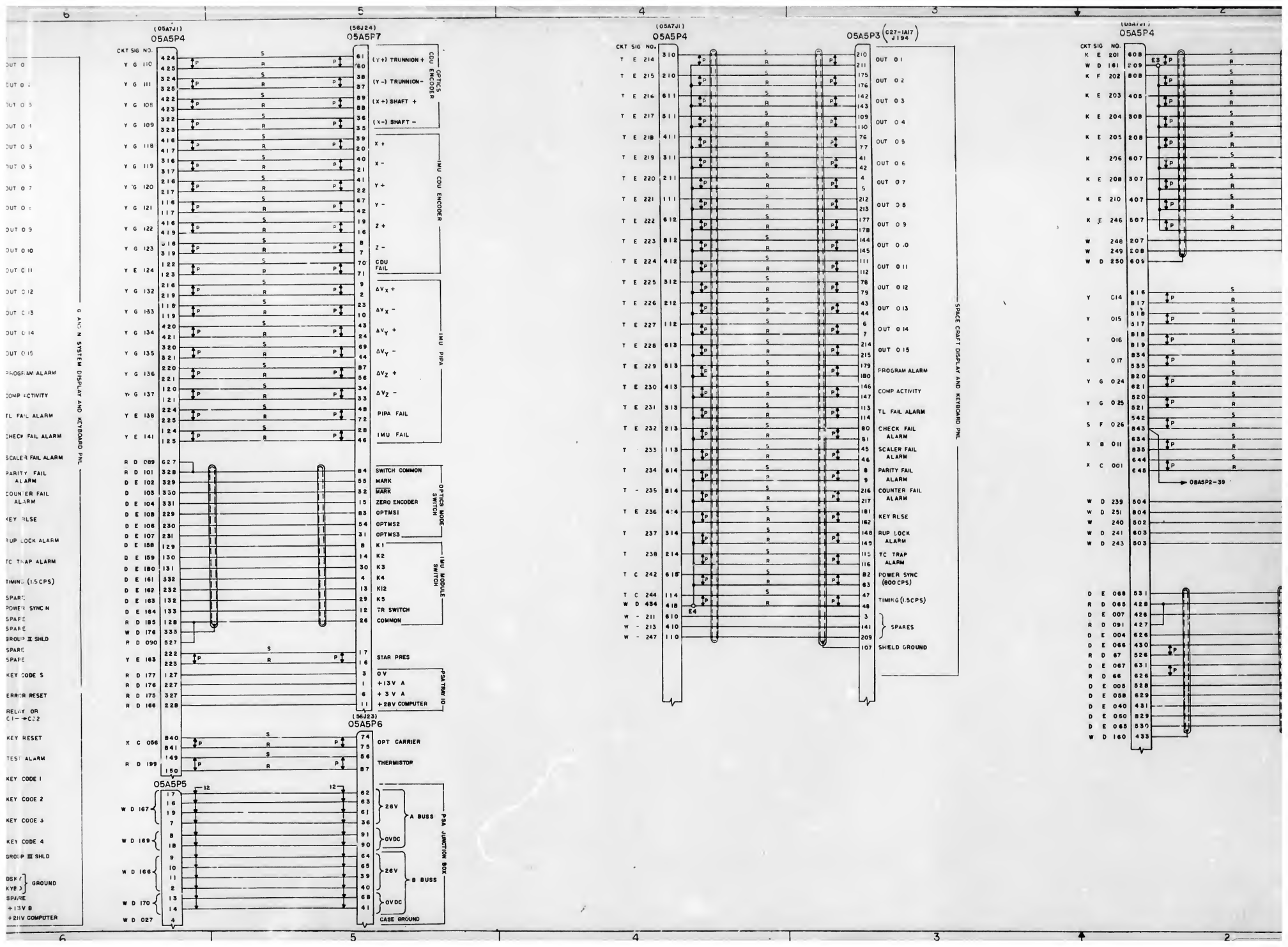


- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. DRAWINGS FOR REFERENCES INTERCONNECTION DIAGRAM, APOLLO GUIDANCE EQUIPMENT, LOWER EQUIPMENT BAY  
PSA FAMILY TREE
  3. REFER TO DRAWING LISTED IN NOTE 2 FOR LISTING OF OTHER PSA JUNCTION BOX INTERCONNECTION WIRING DRAWINGS AND DEFINITION OF REFERENCE NUMBERS
  4. NUMBERS IN CONDUCTORS GIVE DESTINATION OF THAT CONDUCTOR
  5. INTERFACE CONNECTIONS CONTROLLED BY ICD'S LISTED BELOW

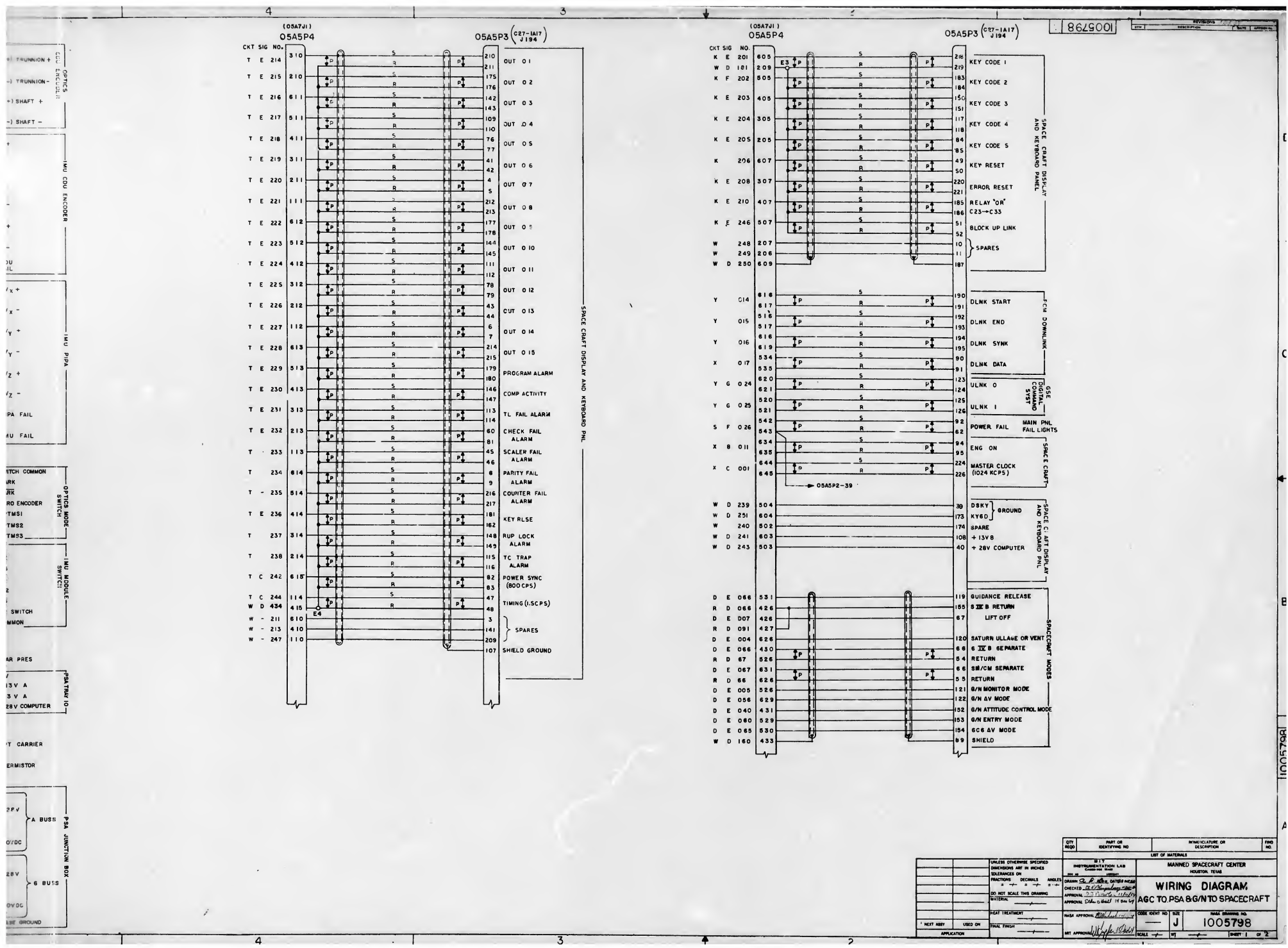
MHOI -01020-216  
       -01024-416  
       -01026-216  
       -01026-416  
 MHOI -01030-200

MHOI -01037-216  
       -01036-216  
       -01046-416  
       -01057-216  
       -01278-216  
       -01276-216  
 MHOI -01280-216





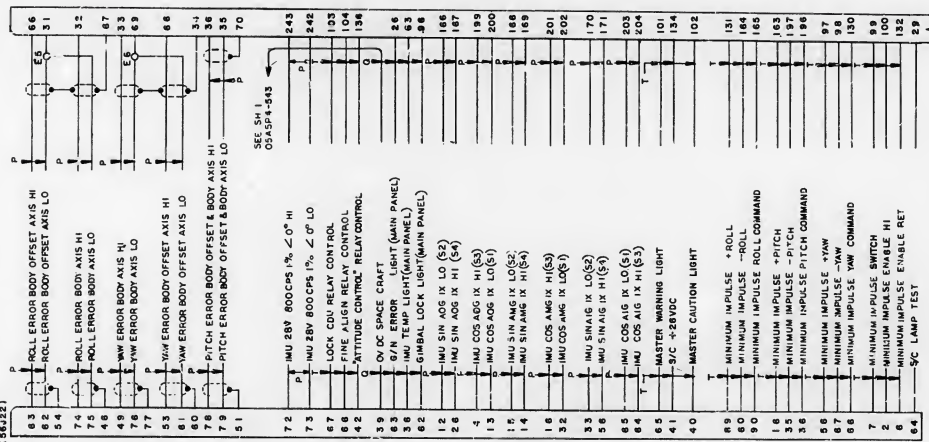






05A5P2  
(154422)

05A5P3  
(C7-117)  
(J84)



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		LIST OF MATERIALS	
63	ROLL ERROR BODY OFFSET AXIS HI	63	ROLL ERROR BODY OFFSET AXIS HI
62	ROLL ERROR BODY OFFSET AXIS LO	62	ROLL ERROR BODY OFFSET AXIS LO
54	ROLL ERROR BODY AXIS HI	54	ROLL ERROR BODY AXIS HI
74	ROLL ERROR BODY AXIS LO	74	ROLL ERROR BODY AXIS LO
75	ROLL ERROR BODY AXIS HI	75	ROLL ERROR BODY AXIS HI
76	ROLL ERROR BODY AXIS LO	76	ROLL ERROR BODY AXIS LO
77	YAW ERROR BODY AXIS HI	77	YAW ERROR BODY AXIS HI
53	YAW ERROR BODY OFFSET AXIS HI	53	YAW ERROR BODY OFFSET AXIS HI
61	YAW ERROR BODY OFFSET AXIS LO	61	YAW ERROR BODY OFFSET AXIS LO
60	YAW ERROR BODY OFFSET AXIS HI	60	YAW ERROR BODY OFFSET AXIS HI
78	PITCH ERROR BODY OFFSET & BODY AXIS HI	78	PITCH ERROR BODY OFFSET & BODY AXIS HI
79	PITCH ERROR BODY OFFSET & BODY AXIS LO	79	PITCH ERROR BODY OFFSET & BODY AXIS LO
51	PITCH ERROR BODY OFFSET & BODY AXIS LO	51	PITCH ERROR BODY OFFSET & BODY AXIS LO
72	IMU 28V 800 CPS 1% $\angle 0^\circ$ HI	72	IMU 28V 800 CPS 1% $\angle 0^\circ$ HI
73	IMU 28V 800 CPS 1% $\angle 0^\circ$ LO	73	IMU 28V 800 CPS 1% $\angle 0^\circ$ LO
67	LOCK CDU RELAY CONTROL	67	LOCK CDU RELAY CONTROL
68	FINE ALIGN RELAY CONTROL	68	FINE ALIGN RELAY CONTROL
42	ATTITUDE CONTROL RELAY CONTROL	42	ATTITUDE CONTROL RELAY CONTROL
39	OV DC SPACE CRAFT	39	OV DC SPACE CRAFT
38	OV TEMP LIGHT (MAIN PANEL)	38	OV TEMP LIGHT (MAIN PANEL)
36	IMU TEMP LIGHT (MAIN PANEL)	36	IMU TEMP LIGHT (MAIN PANEL)
62	GIMBAL LOCK LIGHT (MAIN PANEL)	62	GIMBAL LOCK LIGHT (MAIN PANEL)
12	IMU SIN AGC IX LO (S2)	12	IMU SIN AGC IX LO (S2)
26	IMU SIN AGC IX HI (S4)	26	IMU SIN AGC IX HI (S4)
5	IMU COS AGC IX HI (S3)	5	IMU COS AGC IX HI (S3)
13	IMU COS AGC IX LO (S1)	13	IMU COS AGC IX LO (S1)
15	IMU SIN AGC IX LO (S2)	15	IMU SIN AGC IX LO (S2)
14	IMU SIN AGC IX HI (S4)	14	IMU SIN AGC IX HI (S4)
18	IMU COS AGC IX HI (S3)	18	IMU COS AGC IX HI (S3)
32	IMU COS AGC IX LO (S1)	32	IMU COS AGC IX LO (S1)
33	IMU SIN AGC IX LO (S2)	33	IMU SIN AGC IX LO (S2)
36	IMU SIN AGC IX HI (S4)	36	IMU SIN AGC IX HI (S4)
65	IMU COS AGC IX LO (S2)	65	IMU COS AGC IX LO (S2)
64	IMU COS AGC IX HI (S3)	64	IMU COS AGC IX HI (S3)
65	MASTER WARNING LIGHT	65	MASTER WARNING LIGHT
41	3/C +28VDC	41	3/C +28VDC
40	MASTER CAUTION LIGHT	40	MASTER CAUTION LIGHT
89	MINIMUM IMPULSE +ROLL	89	MINIMUM IMPULSE +ROLL
60	MINIMUM IMPULSE -ROLL	60	MINIMUM IMPULSE -ROLL
90	MINIMUM IMPULSE ROLL COMMAND	90	MINIMUM IMPULSE ROLL COMMAND
16	MINIMUM IMPULSE +PITCH	16	MINIMUM IMPULSE +PITCH
35	MINIMUM IMPULSE -PITCH	35	MINIMUM IMPULSE -PITCH
36	MINIMUM IMPULSE PITCH COMMAND	36	MINIMUM IMPULSE PITCH COMMAND
56	MINIMUM IMPULSE +YAW	56	MINIMUM IMPULSE +YAW
67	MINIMUM IMPULSE -YAW	67	MINIMUM IMPULSE -YAW
68	MINIMUM IMPULSE YAW COMMAND	68	MINIMUM IMPULSE YAW COMMAND
7	MINIMUM IMPULSE SWITCH	7	MINIMUM IMPULSE SWITCH
2	MINIMUM IMPULSE ENABLE HI	2	MINIMUM IMPULSE ENABLE HI
6	MINIMUM IMPULSE ENABLE RET	6	MINIMUM IMPULSE ENABLE RET
64	SC LAMP TEST	64	SC LAMP TEST

## 05A5P4

W O 235 804  
W O 251 604  
W O 240 502  
W O 241 603  
W O 243 503  
W O 176 333  
W O 179 215

R O 186 226  
R D 175 227  
R D 176 327  
R D 177 127

X A 116 436  
437

X A 117 336  
337

X A 114 434  
435

X A 115 334  
335

X A 131 130  
131

X A 126 234  
235

X A 127 134  
135

X A 128 236  
237

X A 129 136  
137

X A 120 236  
237

X C 139 347  
348

X C 140 247  
248

X A 142 436  
437

X A 143 336  
337

X A 144 440  
441

X A 145 340  
341

X A 146 240  
241

X A 147 140  
141

X C 148 446  
447

X C 149 442  
443

X C 150 342  
343

X C 151 242  
243

X C 152 142  
143

Y C 153 444  
445

X C 154 344  
345

X C 155 244  
245

X C 156 144  
145

B F 157 146  
147

148

## 05A5P1

173 DSKY GROUND  
39 KYBD GROUND  
174 SPARE  
106 +13V B  
40 +28V COMPUTER  
53 K SHLDS  
23 Y SHLDS  
22

234 +28V COMPUTER  
96 +3V A  
62 +13V A  
63 0 V

235 (Y+) TRUNKION +

197 (Y-) TRUNKION -

163 (Z+) SHAFT +

164 (X-) SHAFT -

130 Z -

97 X +

64 X -

31 Y +

237 Y -

199 Z +

165 PIPA INTERROGATE

132 PIPA CLOCK

100 X +

67 X -

32 Y +

239 Y -

201 Z +

167 Z -

168 Z +

134 Z -

101 GYRO RESET

102 800 CPS SET

69 800 CPS RESET

34 3.2 KC SET

203 3.2 KC RESET

204 25.6 KC SET

169 25.6 KC RESET

136 CONVERTER SYNC

137 (12.6 KC)

103 DISCRETE SIG CARRIER

104 (102.4 KC)

71 AGC POWER FAIL SIG

36 +28VDC

37 CONO LAMP TEST

38

## 05A5P4

CKT SIG NO. 210

T E 214 810

T E 215 810

T E 216 811

T E 217 811

T E 218 411

T E 219 311

T E 220 211

T E 221 111

T E 222 612

T E 223 912

T E 224 412

T E 225 312

T E 226 212

T E 227 112

T E 228 613

T E 229 513

T E 230 413

T E 231 313

T F 232 213

T 233 113

T 234 814

T 235 514

T E 236 414

T 237 314

T 238 214

T C 244 114

W O 330 316

W 211 810

T C 212 510

W 213 410

W 247 110

W 243 207

W 249 208

K E 205 205

K 206 307

K E 210 407

K 209 107

K 207 108

K E 201 608

K E 202 808

E 203 408

K E 204 306

W D 181 209

W D 200 606

## 05A5P1

210

175

176

142

143

109

110

76

77

41

42

5

712

213

177

144

145

111

112

78

79

43

44

7

218

215

146

147

113

114

80

81

45

46

8

216

217

181

182

148

149

115

116

47

48

3

75

141

209

107

10

11

64

65

220

221

185

186

12

13

14

15

216

219

183

184

150

151

117

118

187

## 05A5P4

CKT SIG NO. 414

Y G 110 420

Y G 111 324

Y G 108 422

Y G 109 423

Y G 118 416

Y G 119 417

Y G 120 316

Y G 121 216

Y G 122 116

Y G 123 419

Y E 124 319

Y G 132 122

Y G 133 123

Y G 134 219

Y G 135 218

Y G 136 320

Y G 137 321

Y E 138 121

Y E 139 224

Y E 141 225

R O 099 627

R D 101 326

R D 102 328

O 103 330

O 104 331

O 105 229

O 106 230

D E 107 231

D E 108 126

D E 109 130

D E 110 131

D E 111 326

D E 112 328

D E 113 330

D E 114 331

D E 115 229

D E 116 230

D E 117 231

D E 118 126

D E 119 130

D E 120 131

D E 121 326

D E 122 328

D E 123 330

D E 124 331

D E 125 229

D E 126 230

D E 127 231

D E 128 126

D E 129 130

D E 130 131

D E 131 326

D E 132 328

D E 133 330

D E 134 331

D E 135 229

D E 136 230

D E 137 231

D E 138 126

D E 139 130

D E 140 131

D E 141 326

D E 142 328

D E 143 330

D E 144 331

D E 145 229

D E 146 230

D E 147 231

D E 148 126

D E 149 130

D E 150 131

D E 151 326

D E 152 328

D E 153 330

D E 154 331

D E 155 229

D E 156 230

D E 157 231

D E 158 126

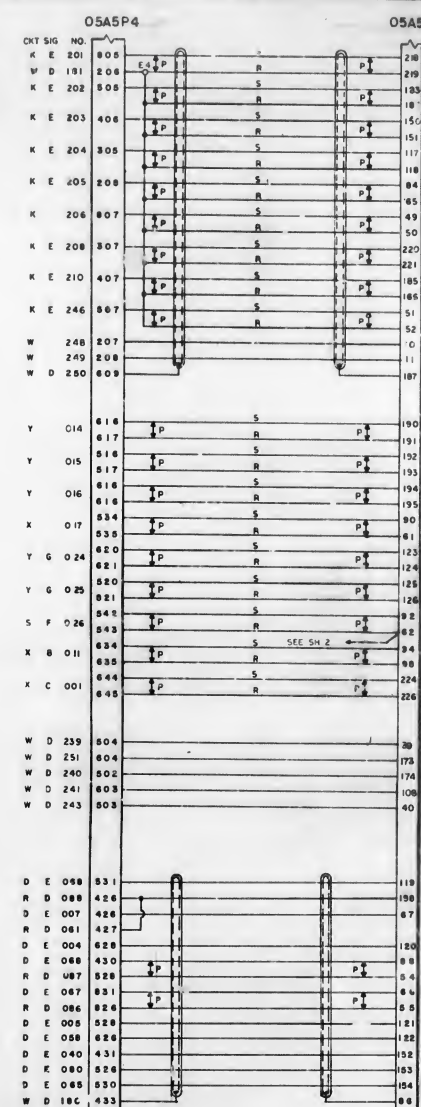
D E 159 130

D E 160 131

D E 161 326

D E 162 328

D E 163 330





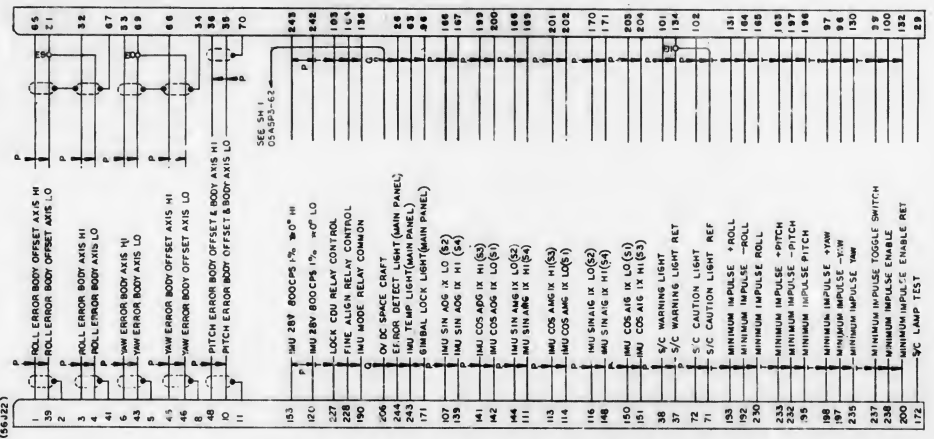


1005799

REVISED PER TORR 18834	DATE	APPROVED
OR 172 C6	1964	

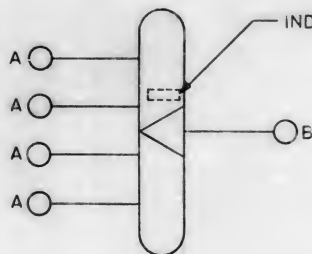
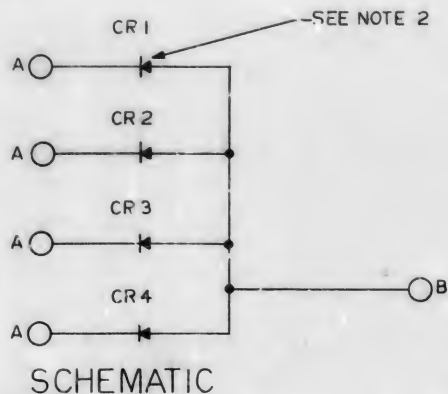
05A5P2  
(56122)

05A5P3

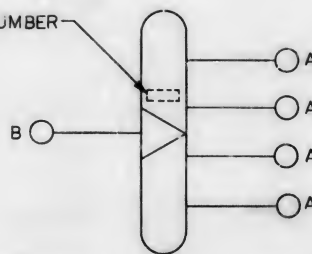


QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIG NO
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
WIRING DIAGRAM			
AGC TO PSA & G/N TO SPACECRAFT			
NADA APPROVED: [Signature]		CODE IDENT NO: J	NADA DRAWING NO: 1005799
EXT APPROVAL: [Signature]		SCALE: 1/2"	SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAME DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERS ANY RIGHTS OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



SYMBOL



ALTERNATE SYMBOL  
ORIENTATION

NOTES :

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR DIODES SEE FIND NO. 1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
		TOLERANCES ON		
		FRACTIONS	DECIMALS	ANGLES
		±	±	±
		DO NOT SCALE THIS DRAWING		
		MATERIAL		
		HEAT TREATMENT		
		FINAL FINISH		
NEXT ASSY	USED ON			
APPLICATION				

1006002

REVISIONS			
SYN	DESCRIPTION	DATE	APPROVAL

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00001 DATE 7-13-62

REFERENCE :

1. MECHANICAL ASSEMBLY DWG. 1003002
2. TEST IN ACCORDANCE WITH TEST SPEC ATP 1003002

PARTS LIST FOR ENGINEERING REF ONLY

4	1006751	DIODE, SILICON, LOGIC	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWN. NO. CONTRACT		DRAWN BERKELEY DATE 7-9-62	
CHECKED Joe Martin		APPROVAL Albert Hopkins	
APPROVAL Eldon C. Hall		SCHEMATIC DA CIRCUIT	
NASA APPROVAL Jack Barnard		CODE IDENT NO. SIZE	NASA DRAWING NO.
MIT APPROVAL Ray B. Beyer		C	1006002
SCALE		WT	SHEET OF

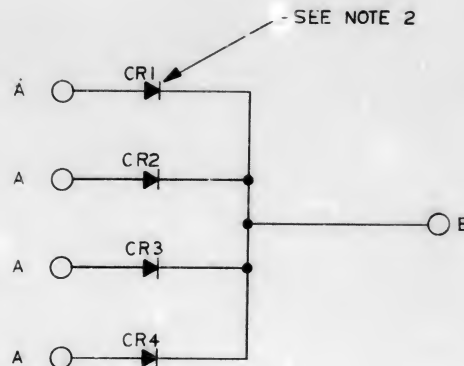


NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE-RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

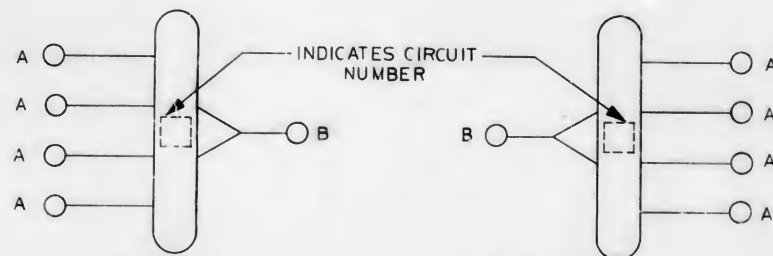
0009001

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL



SCHEMATIC



SYMBOL

ALTERNATE SYMBOL ORIENTATION

NOTE:  
1-INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
2-FOR ALL DIODES SEE FIND NO. 1

## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00001 DATE 7-13-62

### REFERENCE:

1. MECHANICAL ASSEMBLY DRAWING 1003003
2. TEST IN ACCORDANCE WITH TEST SPEC. ATP 1003003

PARTS LISTS FOR ENGINEERING REF. ONLY

4	1006751	DIODE, SILICON, LOGIC	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN R. CHIN	DATE 7/6/62	SCHEMATIC DK CIRCUIT	
CHECKED <i>John Martin</i>	APPROVAL <i>John Martin</i>		
APPROVAL <i>Elden C. Hall</i>			
NASA APPROVAL <i>John Barman</i>	CODE IDENT NO.	SIZE C	NASA DRAWING NO. 1006003
MIT APPROVAL <i>Paul R. Bryant</i>	SCALE --#	WT --#	SHEET OF

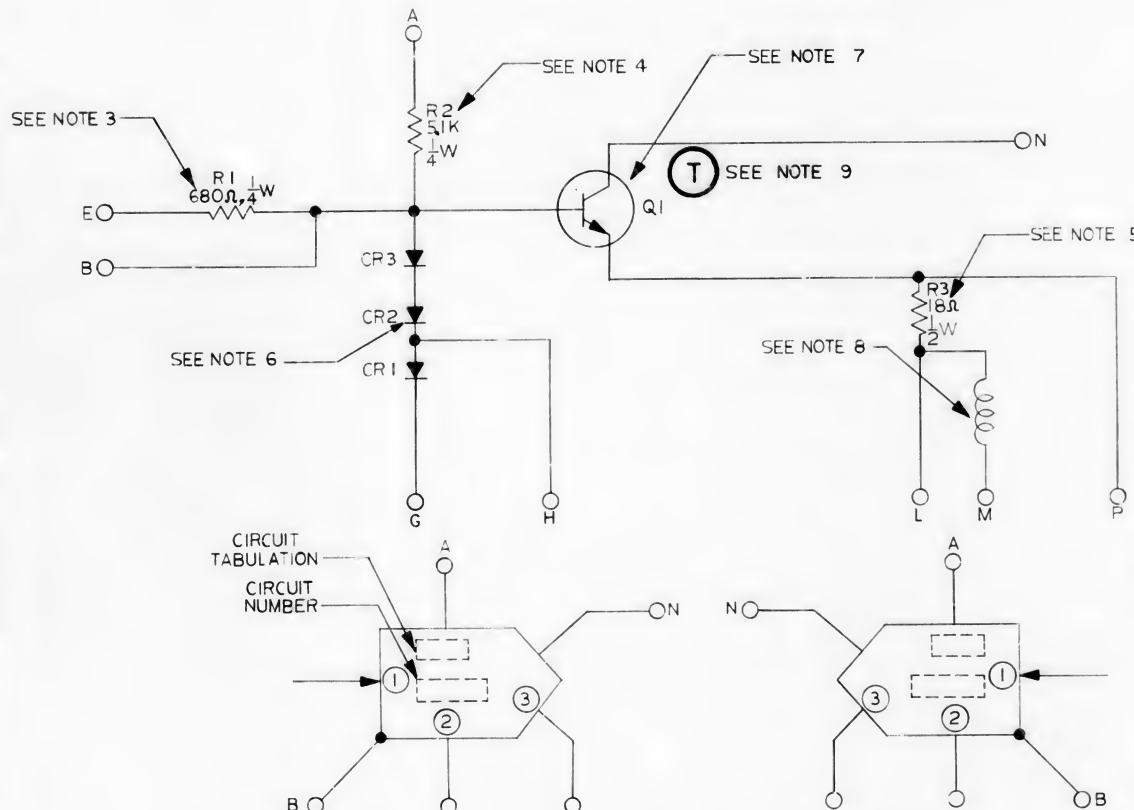
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
$\pm$	$\pm$	$\pm$
DO NOT SCALE THIS DRAWING		
MATERIAL		
HEAT TREATMENT		
FINAL FINISH		
NEXT ASSY	USED ON	APPLICATION

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PURCHASE OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO LIABILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

CIRCUIT TYPE	CURRENT (ma)	CONNECTION 1	CONNECTION 2	CONNECTION 3	COIL	
					PART NO	VALUE
HA	40	E	H	L		
HB	80	E	G	L		
HG	40	E	H	M	1006779-1	8.2uh
HH	80	E	G	M	1006779-2	3.9uh

8009001

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REMOVED CIRCUIT TYPES HC, HD, HE, HF, HJ, HK, REMOVED PINS F, J, K, D, REMOVED 40UH COIL, RESISTORS AND DIODES RENUMBERED, PARTS LIST AND NOTES REARRANGED TO CORRESPOND WITH DRAWING ADDED COIL TABLE	92462	WBT
		TDR 00092 7/27/62	WBT



## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00001 DATE 7-13-62

### REFERENCE:

1. MECHANICAL ASSEMBLY DRAWING 1003010
2. TEST IN ACCORDANCE WITH TEST SPEC. ATP 1003010

PARTS LISTS FOR ENGINEERING REF. ONLY

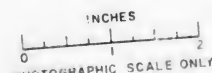
1	1006759	TRANSISTOR NPN MEDIUM POWER	5
3	1006751	DIODE SILICON LOGIC	4
1	1006760-7	RESISTOR, 18Ω 1/2W 5%	3
1	1006750-66	RESISTOR, 5.1K 1/4W 5%	2
1	1006750-45	RESISTOR, 680Ω 1/4 5%	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

### LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWG NO	CONTRACT	DATE 7/9/62	
DRAWN R. CHIN	CHECKED <i>[Signature]</i>	APPROVAL <i>[Signature]</i>	
NASA APPROVAL <i>[Signature]</i>	CODE IDENT NO.	SIZE C	NASA DRAWING NO 1006008
MIT APPROVAL <i>[Signature]</i>	SCALE	WT	SHEET OF

### NOTE:

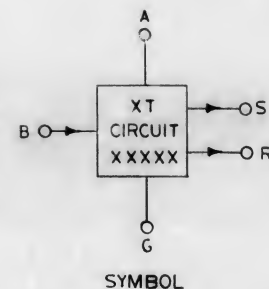
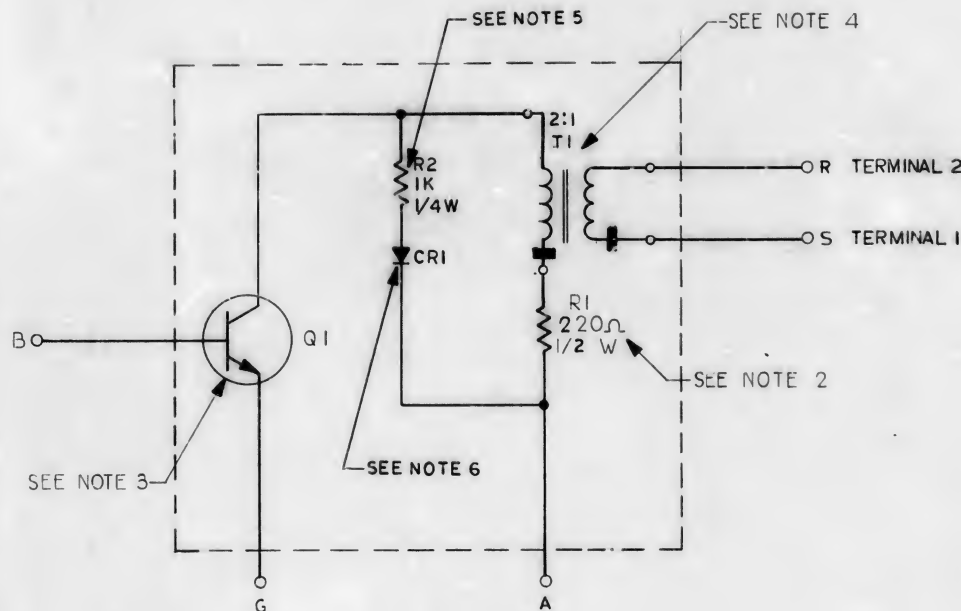
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WHEN THE SYMBOL IS DRAWN, THE APPROPRIATE LETTER FROM THE TABLE MUST BE ENTERED AT ① ② AND ③ IN THE SYMBOL
3. FOR R1 SEE FIND NO. 1
4. FOR R2 SEE FIND NO. 2
5. FOR R3 SEE FIND NO. 3
6. FOR DIODES CR1, CR2, CR3, SEE FIND NO. 4
7. FOR TRANSISTOR, SEE FIND NO. 5
8. FOR COIL SEE TABLE ABOVE
9. THERMAL ENVIRONMENT CRITICAL



ALTERNATE SYMBOL ORIENTATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
FRACTIONS	DECIMALS ANGLES
±	±
DO NOT SCALE THIS DRAWING	
MATERIAL	
HEAT TREATMENT	
FINAL FINISH	
NEXT ASSY	USED ON
APPLICATION	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSIONS, ERRORS, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OF PATENT OR INVENTION THAT MAY BE HELD BY THE UNITED STATES GOVERNMENT.



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	CHANGED DIRECTION OF EMITTER ARROW - CHANGED RESISTORS TO 1/4 W	7-20-62	DD
B	REVISED AND RELEASED CLASS A PER TDRR 00082	10-21-62	CON WLR
C	REVISED PER TDRR 00560	3-13-63	CON WLR
D	REVISED PER TDRR 01747	6-24-63	CON WLR
E	REVISED PER TDRR 02054	7-17-63	RPR
F	REVISED PER TDRR 03042	10-17-63	RPR WLR
G	REVISED PER TDRR 04014	10-17-63	RPR WLR

# NOTES-

- 1-INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
- 2-FOR R1 SEE FIND NO.1
- 3-FOR Q1 SEE FIND NO.2
- 4-FOR T1 SEE FIND NO.3
- 5-FOR R2 SEE FIND NO.4
- 6-FOR CR1 SEE FIND NO.5

1	100E751	DIODE	5
1	1006750-32	RESISTOR, 1/4 W 1K	4
1	1006762	TRANSFORMER, PULSE	3
1	1006752	TRANSISTOR, I. N, LOGIC	2
1	1006760-16	RESISTOR, 1/2 W 220Ω	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

## LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm$ $\pm$ $\pm$ DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINAL FINISH NEXT ASSY USED ON APPLICATION		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. Dwg. No. CONTRACT DRAWN MAHONEY DATE 7/9/62 CHECKED <i>Joe Martin</i> APPROVAL <i>Albert Hopkins</i> APPROVAL <i>Edgar C. Hall</i>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC XT TRANSFORMER OUTPUT CIRCUIT	
		NASA APPROVAL <i>Jack Barnard</i> MIT APPROVAL <i>Ray K. Bryant</i>	CODE IDENT NO. SIZE C	NASA DRAWING NO. 1006009	SCALE WT SHEET 1 OF 1

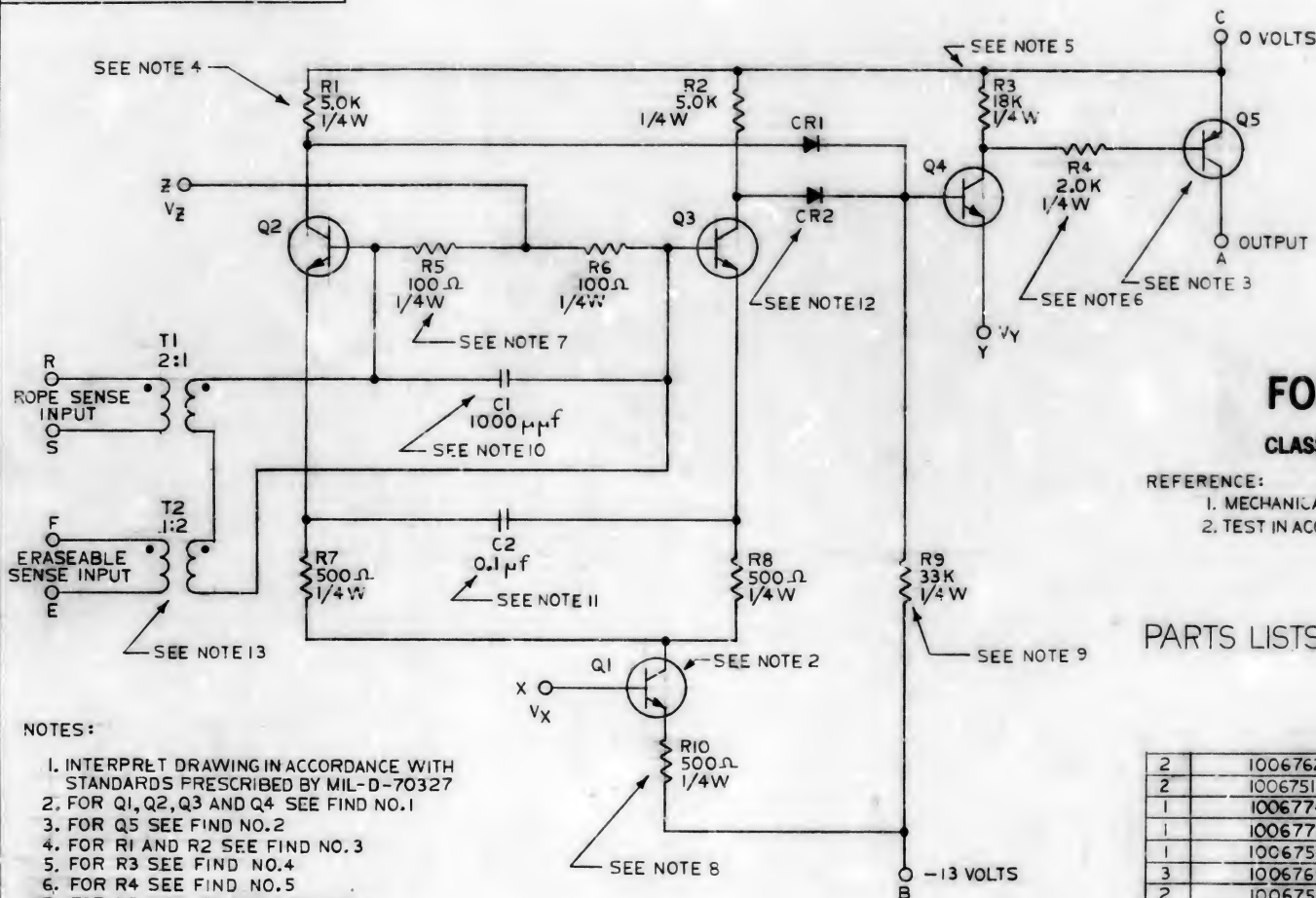


NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE-RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSIONS, ERRORS, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORWARDED, FURNISHED, OR IN ANY WAY SUPPLIED THE DATA HEREIN, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVERTING ANY RIGHTS IN "INVENTIONS TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF."

1109001

REVISIONS

SYM DESCRIPTION DATE APPROVAL



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR Q1, Q2, Q3 AND Q4 SEE FIND NO. 1
3. FOR Q5 SEE FIND NO. 2
4. FOR R1 AND R2 SEE FIND NO. 3
5. FOR R3 SEE FIND NO. 4
6. FOR R4 SEE FIND NO. 5
7. FOR R5 AND R6 SEE FIND NO. 6
8. FOR R7, R8, AND R10 SEE FIND NO. 7
9. FOR R9 SEE FIND NO. 8
10. FOR C1 SEE FIND NO. 9
11. FOR C2 SEE FIND NO. 10
12. FOR CR1 AND CR2 SEE FIND NO. 11
13. FOR T1 AND T2 SEE FIND NO. 12
14.  $V_X, V_Y, V_Z$  SUPPLIED FROM TYPE SE CIRCUIT REF. DWG. NO. 1006012

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00002 DATE 7-19-62

REFERENCE:

1. MECHANICAL ASSEMBLY DWG. 1003013
2. TEST IN ACCORDANCE WITH TEST SPEC. ATP 1003013

PARTS LISTS FOR ENGINEERING REF. ONLY

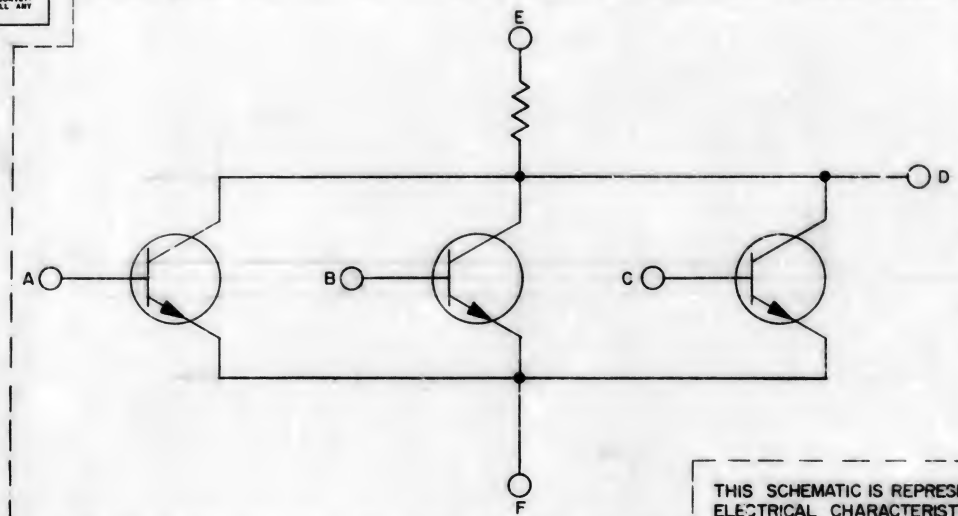
2	1006762	TRANSFORMER, PULSE	12
2	1006751	DIODE, SILICON LOGIC	11
1	1006774	CAPACITOR 0.1 $\mu$ f	10
1	1006775	CAPACITOR 1000 $\mu$ f	9
1	1006750-85	RESISTOR 33K 1/4W 5%	8
3	1006769-	RESISTOR 500 $\Omega$ 1/4W 1%	7
2	1006750-25	RESISTOR 100 $\Omega$ 1/4W 5%	6
1	1006750-56	RESISTOR 2.0K 1/4W 5%	5
1	1006750-79	RESISTOR 18K 1/4W 5%	4
2	1006769-	RESISTOR 5.0K 1/4W 1%	3
1	1006753	TRANSISTOR PNP LOGIC	2
4	1006752	TRANSISTOR NPN LOGIC	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
----------	-------------------------	-----------------------------	----------

LIST OF MATERIALS

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. DWS. NO. CONTRACT DRAWN <i>W. Horgan</i> DATE 7-19-62 CHECKED <i>Joe Moten</i> APPROVAL <i>Robert H. Johnson</i> APPROVAL <i>Edna C. Hall</i>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC SENSE AMPLIFIER CIRCUIT TYPE SA	
		NASA APPROVAL <i>Jack Baranick</i> MIT APPROVAL <i>Philip J. Knight</i>	CODE IDENT NO. SIZE <b>C</b> 1006011
NEXT ASSY USED ON APPLICATION		SCALE <i>1/4"</i> WT <i>1/4"</i> SHEET OF	

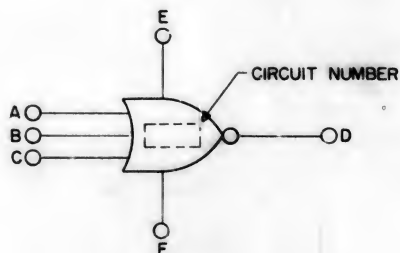
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT INCURS NO RESPONSIBILITY AND ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FORWARDED, OR IN ANY WAY SUPPLIED THE DATA HEREON, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.



THIS SCHEMATIC IS REPRESENTATIVE OF THE ELECTRICAL CHARACTERISTICS ONLY. THE PHYSICAL CIRCUITRY IS ENTIRELY CONTAINED WITHIN A TO-47 CAN

SCHEMATIC

SEE NOTE 2



SYMBOL

## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00002 DATE 7-19-62

### REFERENCE:

1. MECHANICAL ASSEMBLY DWG 1003015
2. TEST IN ACCORDANCE WITH TEST SPEC ATP 1003015

### NOTE

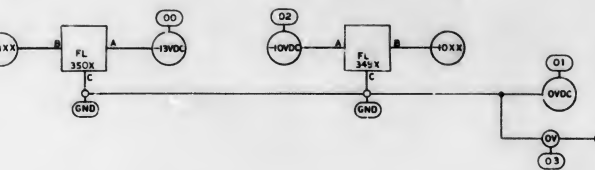
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FOR MICROLOGIC GATE SEE FIND NO 1

1006771		MICROLOGIC GATE (TO-47 SIZE)	
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN PLACHOWICZ DATE 7-18-62		SCHEMATIC MICROLOGIC GATE MG CIRCUIT	
CHECKED <i>Joe [Signature]</i>		NASA DRAWING NO. 1006013	
APPROVAL <i>Robert C. Hall</i>		SCALE NONE WT	
NASA APPROVAL <i>Jack [Signature]</i>		SHEET 1 OF 1	
MIT APPROVAL <i>Ray [Signature]</i>			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
± .125	± .010	± .1°
DO NOT SCALE THIS DRAWING		
MATERIAL		
HEAT TREATMENT		
FINAL FINISH		
NEXT ASSY	USED ON	APPLICATION

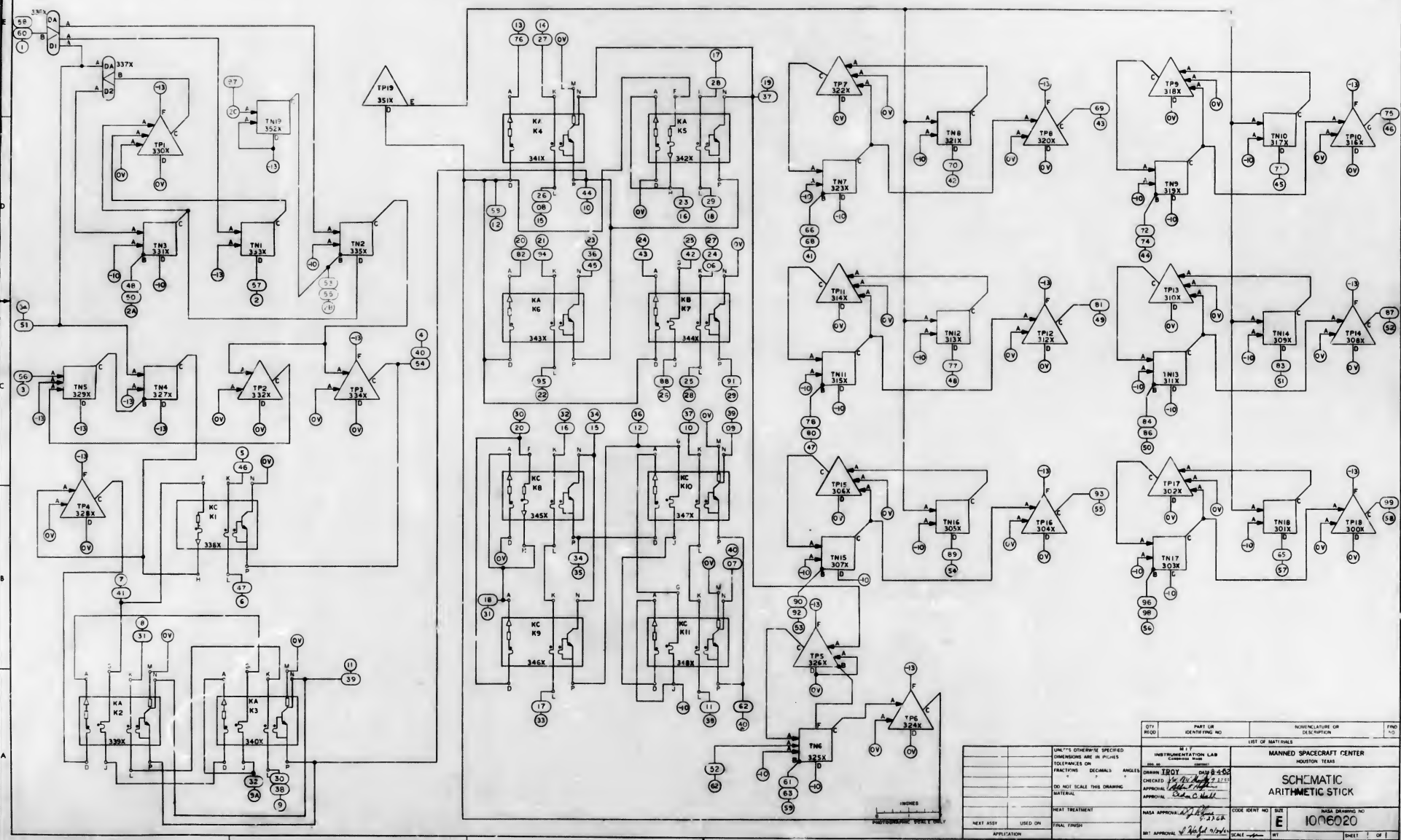


6



REVISIONS		DATE	APPROVAL
1	INPUT AND OUTPUT OF THIS REVERSE	9-27-62	[Signature]
2	TN 6-SIGNAL 62 WAS 15	10-15-62	[Signature]
3	IS: 32	10-15-62	[Signature]

FOR INFORMATION ONLY  
CLASS B RELEASE TOR No. 20031 DATE 9-27-62

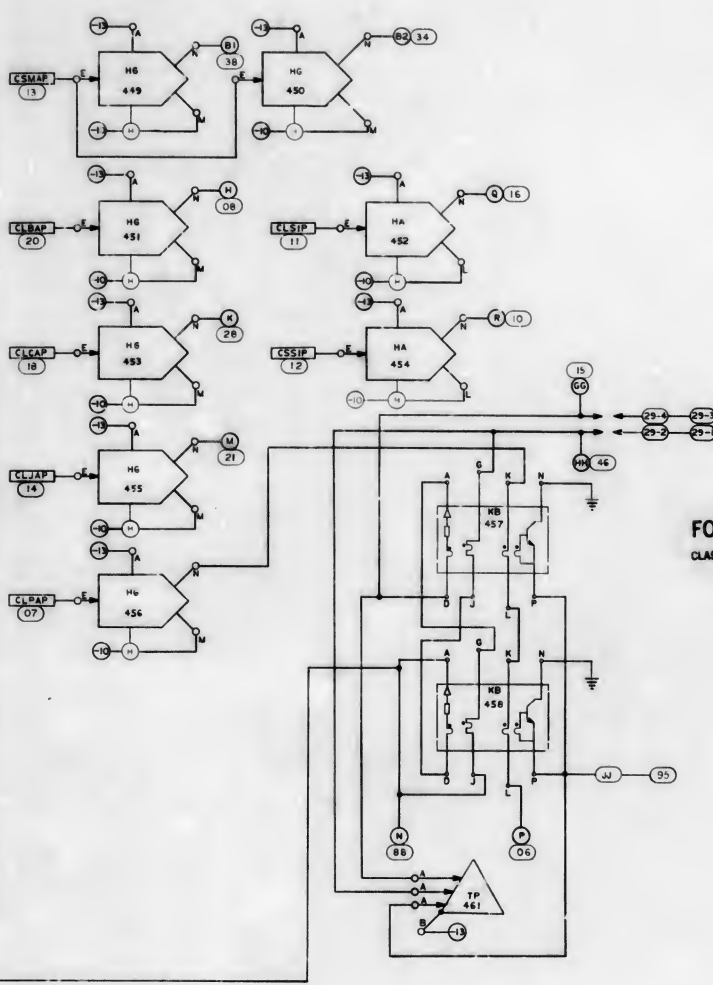
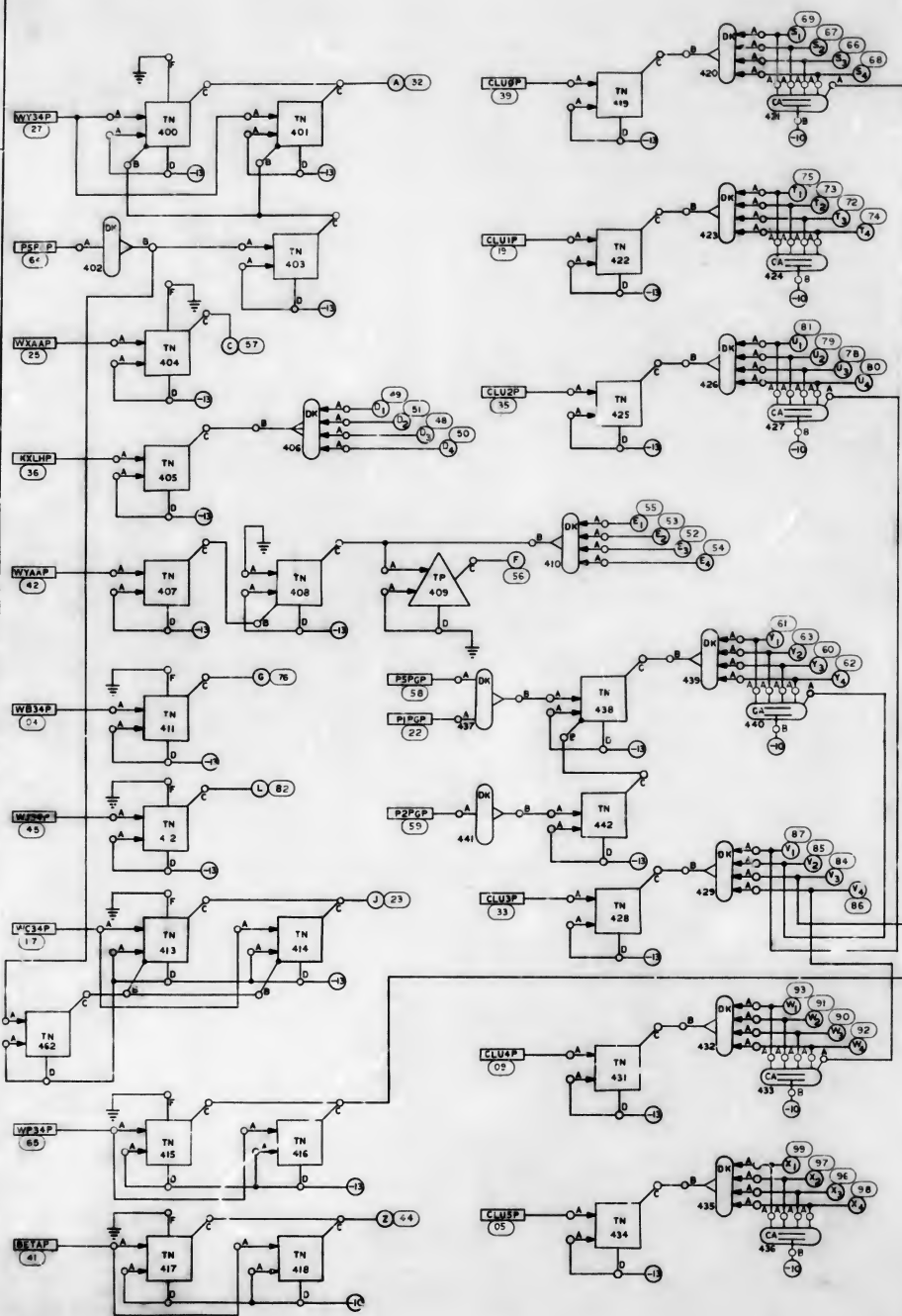


QTY REQD	PART OR IDENTIFYING NO	DESCRIPTION OR SERIAL NO	DATE
LIST OF MATERIALS		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
SCHEMATIC ARITHMETIC STICK		E 106020	
NADA APPROVAL: [Signature]		CODE IDENT NO	DATE DEDUCT NO
NEXT ASSY		USED ON	APPLICATION
HEAT TREATMENT		FINAL TROUGH	
APPROVAL: [Signature]		SCALE	UNIT

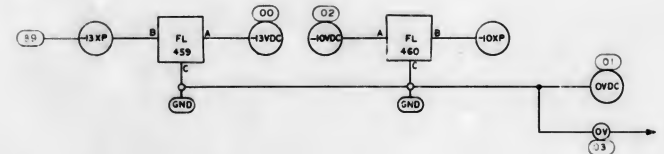


1006022-1

REVISIONS  
 1. ADDED TO ALL WIRING CIRCUITS 27-5-67

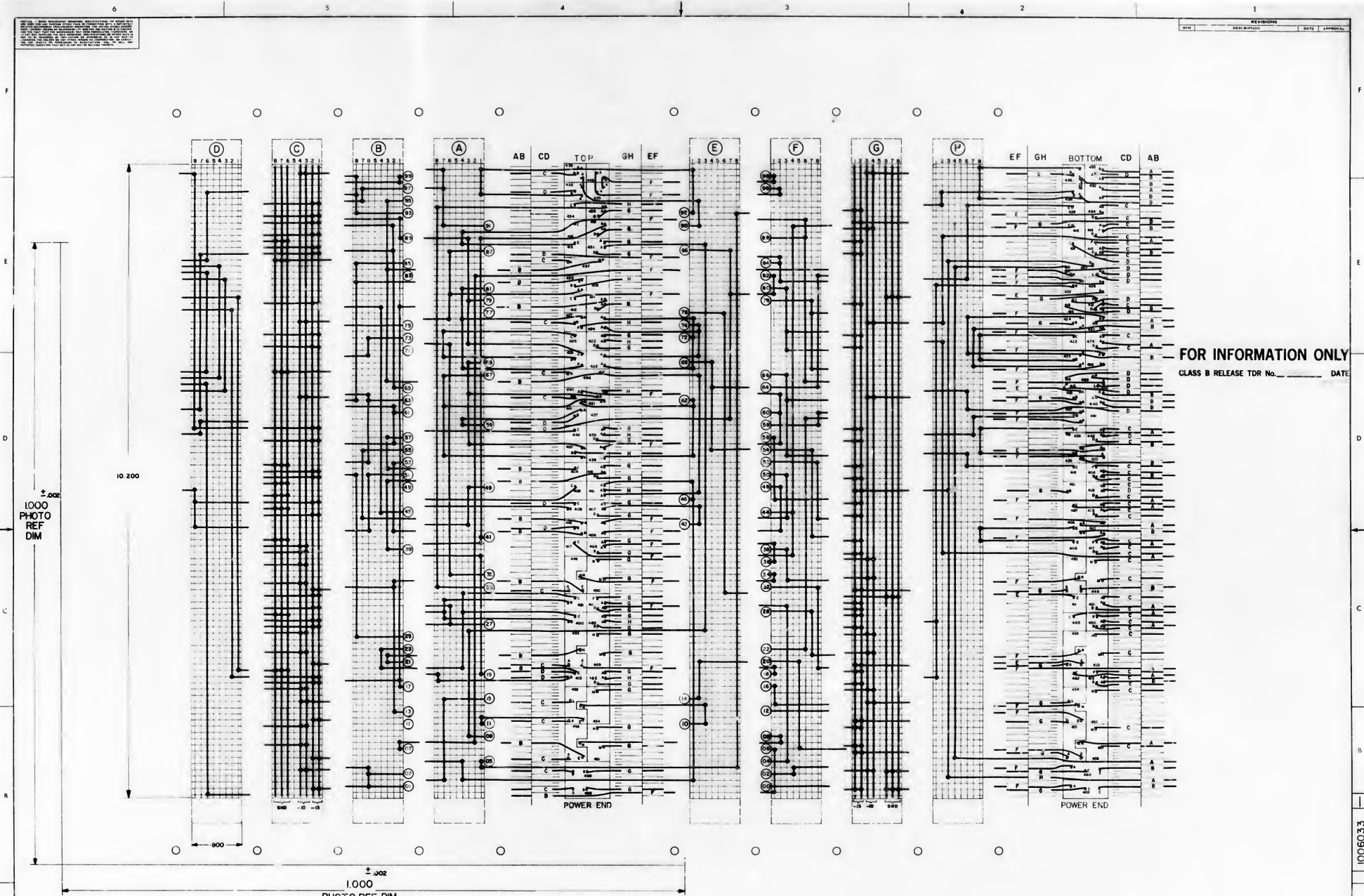


FOR INFORMATION ONLY  
 CLASS B RELEASE TDR No. 00031 DATE 9-29-67



QTY REV		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIND NO	
MTE INSTRUMENTATION LAB HOUSTON, TEXAS DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN APPROVED BY: J. B. BROWN DATE: 10-1-67 TITLE: SCHEMATIC ARITHMETIC PULSE STICK COOR DENT NO: E SCALE: 1006022 SHEET 1 OF 1							

1006022-1



FOR INFORMATION ONLY  
CLASS B RELEASE TDR No. \_\_\_\_\_ DATE \_\_\_\_\_

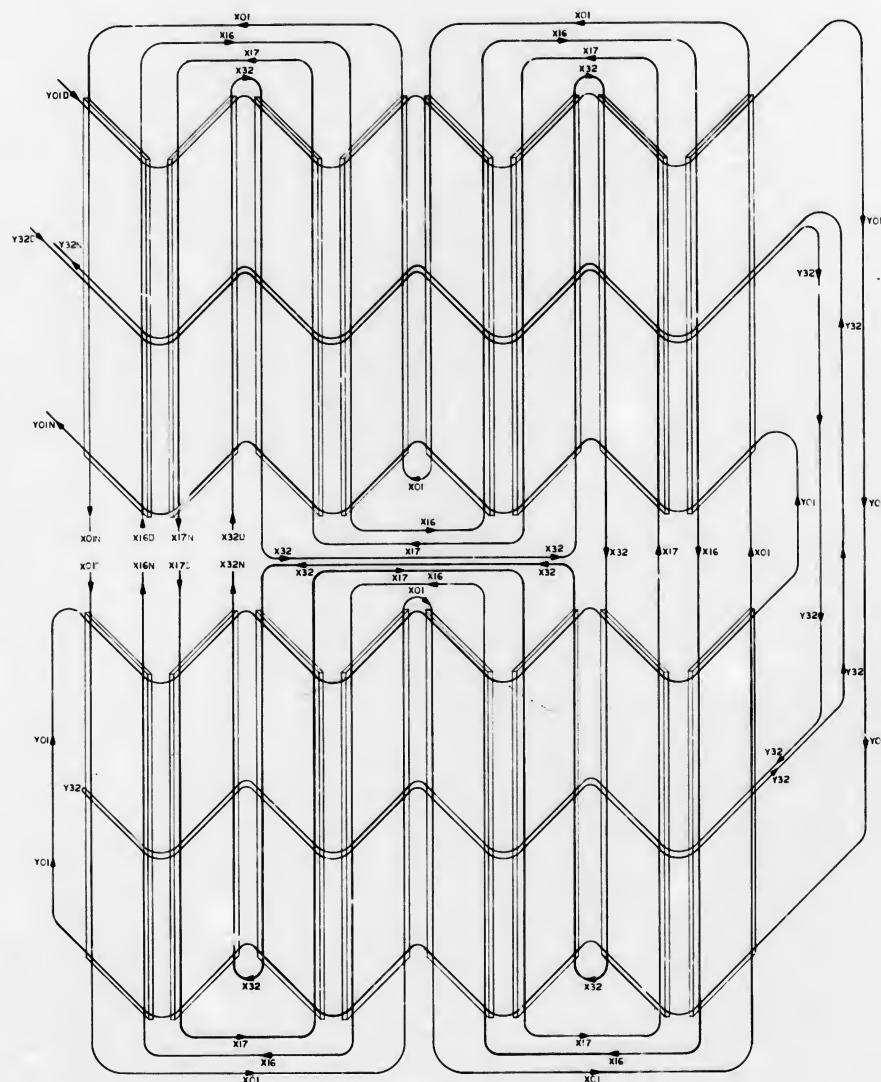
NOTES -  
1- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.  
2- ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY & MEMORIAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH.  
3- MAKE MASTER PATTERN POSITIVE 7" MS TO DIMENSIONS SHOWN.  
4- CUT TO WITHIN .010 OF TRIMLINE.

CITY (REQ)		PART OR IDENTIFYING NO.		QUANTITY (REQ)		DATE	
MANNED SPACECRAFT CENTER HOUSTON, TEXAS		MATRIX WIRING, ARITHMETIC PULSE STICK		NASA DRAWING NO. 1006033		SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		CHECKED BY <i>[Signature]</i> DATE <i>10/10/63</i> APPROVED BY <i>[Signature]</i> DATE <i>10/10/63</i>		NASA APPROVAL <i>[Signature]</i> DATE <i>10/10/63</i>		SCALE 2/1	
HEAT TREATMENT USED ON _____ FINAL FINISH _____		APPLICATION _____		REVISIONS		DATE	









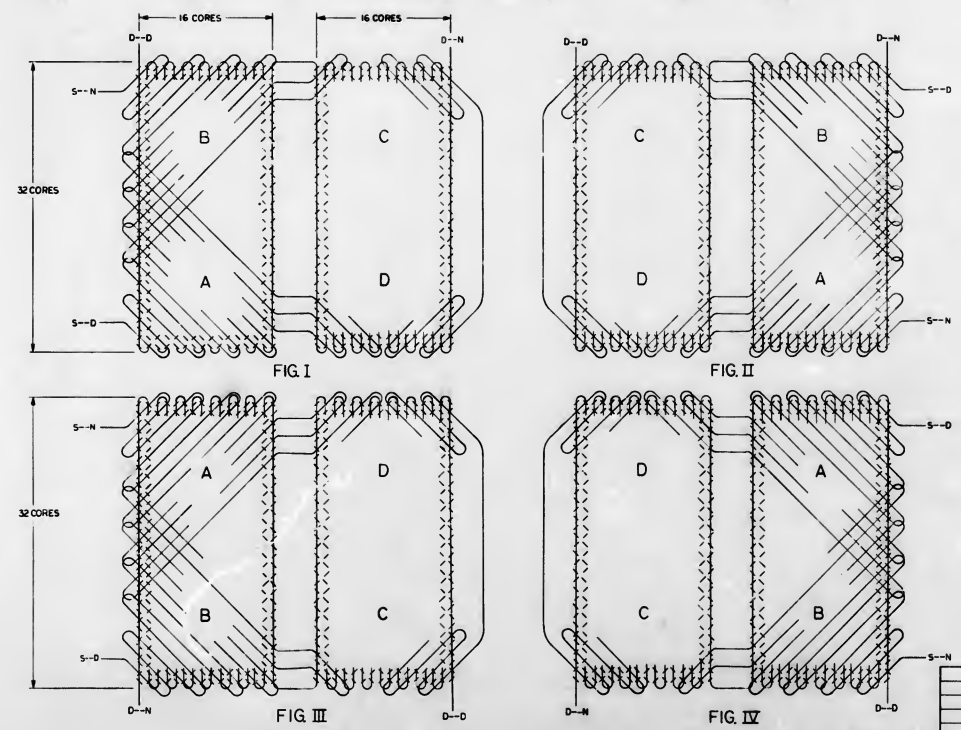
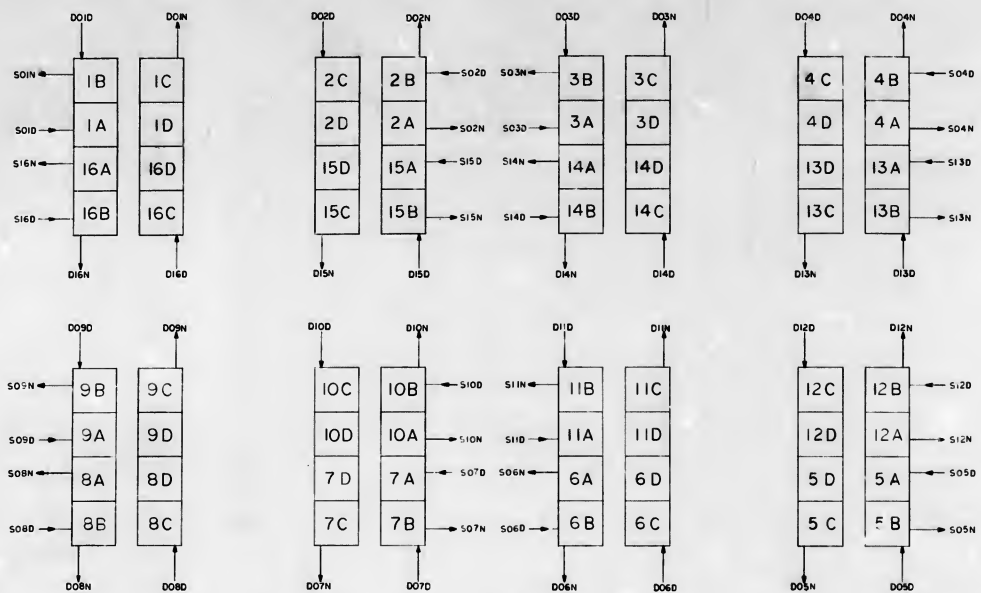
ISOMETRIC VIEW

FOR INFORMATION ONLY

CLASS 3 RELEASE TUR No. 20076 DATE 10-24-68

REFERENCE: W. J. RAY LINE WITH NO DIAGRAM 1006030

TITLE REQD		PART OR (IDENTIFYING NO.)		NUMBER OF ATTACH OR LETTER DIFFERENT		DATE	
USE OF MATERIALS				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
M T T INSTRUMENTATION LAB CONTRACT NO.				X & Y LINE INFORMATION DRAWING ERASE-RE MEMORY			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES				CHECKED BY <i>[Signature]</i> DATE <i>10/15/65</i> APPROVAL <i>[Signature]</i> <i>10/15/65</i> APPROVAL <i>[Signature]</i> <i>10/15/65</i>			
DO NOT SCALE THIS DRAWING. MATERIAL:				TOTAL GROSS AREA SIZE <b>E</b> 1066051			
NEXT TREATMENT				NADA DRAWING NO.			
NEXT ASSY USED ON		TOTAL POINTS		SCALE		SHEET	
APPLICATION		APPLICATION		APPLICATION		APPLICATION	



NOTES  
 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327  
 2. TYPICAL SENSE AND INHIBIT WINDINGS FOR:  
 FIG I MATS 1, 3, 5, 7  
 FIG II MATS 2, 4, 6, 8  
 FIG III MATS 9, 11, 13, 15  
 FIG IV MATS 10, 12, 14, 16

INCHES  
 PHOTOGRAPHIC SCALE ONLY

QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DE-SCRIPT		FIND NO	
LIST OF MATERIALS							
MANNED SPACECRAFT CENTER HOUSTON, TEXAS							
SENSE AND INHIBIT WIRING ERASABLE MEMORY							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES CHECKED BY DATE APPROVED BY DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINISH NEXT ASSY USED ON APPLICATION		INSTRUMENTATION LAB DATE 10-25-66 CHECKED BY APPROVED BY NASA APPROVAL CODE SENT NO E 1006056		SCALE		SHEET 1 OF 1	

REV	DESCRIPTION	DATE	APPROVAL
A	CHANGED PER TORR 15691	10/25/66	10/25/66
B	UPGRADED FROM CLASS B TO CLASS A PER TORR 15691	10/25/66	10/25/66
C	CHANGED PER TORR 15691	10/25/66	10/25/66





INTERFACE CIRCUIT NO

### SIGNAL DESCRIPTION

AGC PIN. NO.

AGC CIRCUIT TYPE

102.1

CDU x +

102.2

CDU X -

102.3

CDU Y +

1024

CPU Y →

102.5

CDU Z +

102.6

CDU Z -

102.7

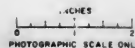
C DU FAIL

102.8

OR OF ~~ZERO'S~~

## NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327



REVISIONS			
SVM	DESCRIPTION	DATE	APPROVAL
(M)	RELEASED CLASS A PER TDR 00084	10/1/82	WHR

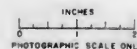
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION		FIN NO
LIST OF MATERIALS				
M I T INSTRUMENTATION LAB Cambridge, Mass Dwg No. <u>CDU104C1</u>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN BY <u>E. Schaefer</u> DATE <u>10-17-67</u> CHECKED BY <u>Joe Pitzer</u> APPROVAL <u>Joe Pitzer</u> APPROVAL <u>Joe C. Hall</u>		AGC INPUTS CDU INTERFACE IDENT APOLLO GUIDANCE COMPUTER		
NASA APPROVAL <u>[Signature]</u> <u>W. J. Pitzer</u>		CODE IDENT NO SIZE <u>D</u>	NASA DRAWING NO <u>1006060</u>	
MIT APPROVAL <u>[Signature]</u> <u>W. J. Pitzer</u>		SCALE <u>---</u>	WT <u>---</u> SHEET <u>2</u> OF <u>14</u>	

NOTES - THIS DRAWING IS A REVISION OF A PREVIOUS DRAWING. IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE EFFECT OF ANY REVISIONS ON THE DESIGN AND CONSTRUCTION OF THE ITEM. THE USER SHOULD CONSULT THE REVISIONS LIST AND THE REVISIONS TO THE DRAWING FOR A COMPLETE LIST OF ALL REVISIONS. THE USER SHOULD ALSO CONSULT THE REVISIONS TO THE DRAWING FOR A COMPLETE LIST OF ALL REVISIONS. THE USER SHOULD ALSO CONSULT THE REVISIONS TO THE DRAWING FOR A COMPLETE LIST OF ALL REVISIONS.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
M	RELEASED CLASS A PER TDRR 00084		WIK

NONE (SEE NOTE)

NOTES  
1. SIGNALS PHYSICALLY ORIGINATING IN THE PSA CAN BE FOUND WHERE THEY LOGICALLY ORIGINATE



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CONTRACT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>[Signature]</i> DATE 10-22-61 CHECKED BY <i>[Signature]</i> APPROVAL <i>[Signature]</i>		AGC INPUTS PSA INTERFACE IDENT APOLLO GUIDANCE COMPUTER	
NASA APPROVAL <i>[Signature]</i> MIT APPROVAL <i>[Signature]</i>		CODE IDENT NO. <b>D</b> SIZE <b>D</b>	NASA DRAWING NO. <b>1006060</b> SHEET 3 OF 14

REVISIONS			
SYM	DESCRIPTION	DATE	APPROV
	RELEASED CLASS A PER TDRR 00084		



INCHES

0 1 2

PHOTOGRAPHIC SCALE ONLY

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES # # #	M.I.T. INSTRUMENTATION LAB CHEMISTRY BLDG. 300-557 DRAWN BY <i>D. B. Jones</i> DATE <i>9/25/63</i> CHECKED BY <i>D. B. Jones</i> APPROVED BY <i>D. B. Jones</i> APPROVAL <i>D. B. Jones</i>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS AGC INPUTS S/C INTERFACE IDENT APOLLO GUIDANCE COMPUTER	
		DO NOT SCALE THIS DRAWING MATERIAL	NASA APPROVAL <i>W. L. ...</i> 8-2-63		COORDINATE * SIZE D 1006060 NASA DRAWING NO.	
NEXT ASSY		USED ON	MIT APPROVAL <i>W. L. ...</i> 9/30/63		SCALE _____ WT _____ SHEET # OF 14	
APPLICATION		FINAL FINISH				



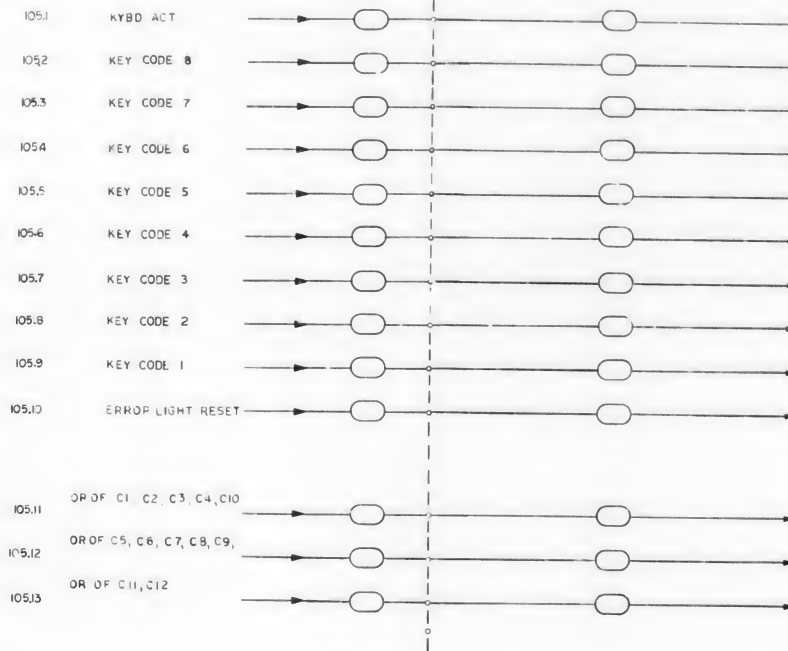
## AGC

INTERFACE CIRCUIT NO

### SIGNAL DESIGNATION

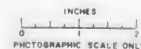
AGC PIN NO

AGC CIRCUIT TYPE



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH  
STANDARD PERSCRIBED BY MIL-D-70327

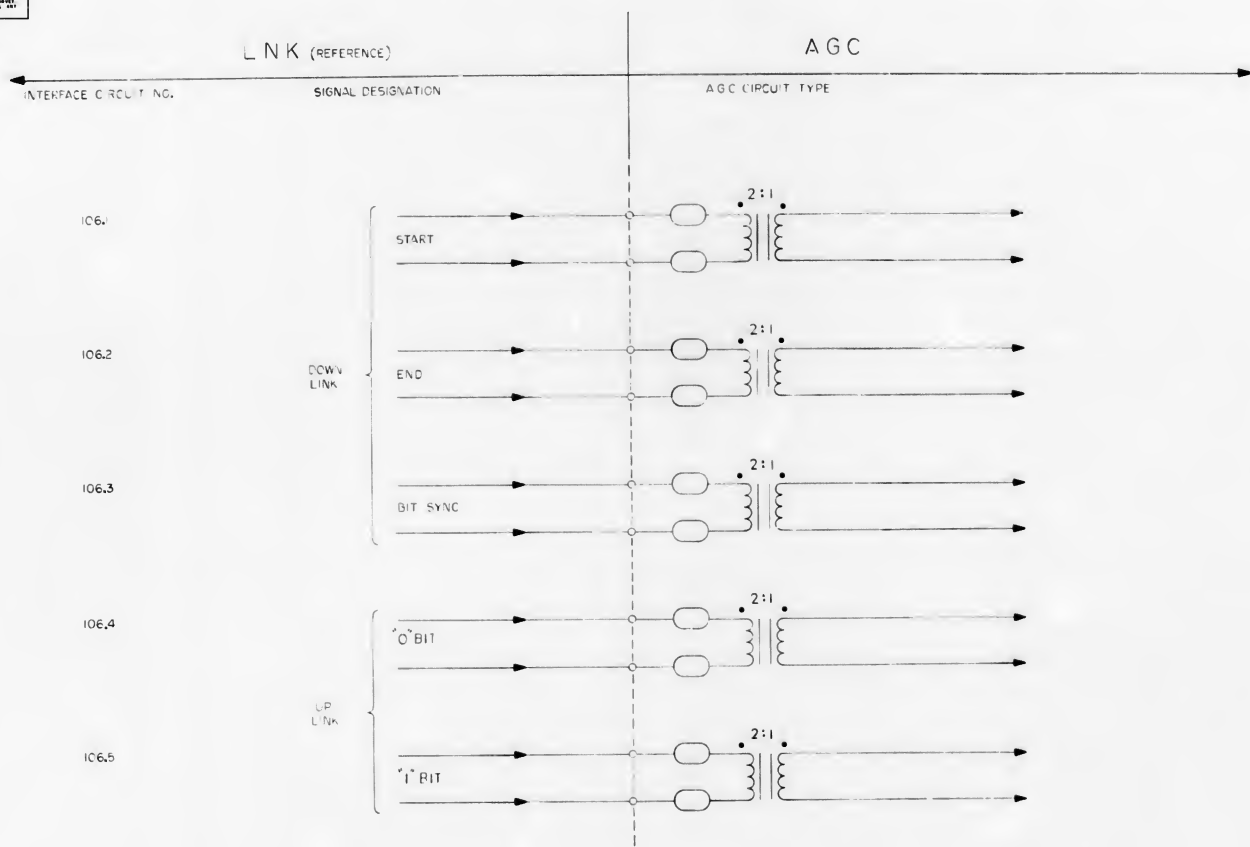


REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
(M)	RELEASED CLASS A PER TORR 000 & g	11/20/00	WPL

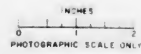
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION		FIN NO
LIST OF MATERIALS				
M.I.T. INSTRUMENTATION LAB Cambridge, Mass		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DWG NO.	CONTRACT			
DRAWN BY <i>J. G. ...</i>	DATE <i>12-22-60</i>	AGC INPUTS		
CHECKED BY <i>J. G. ...</i>		DISPLAY INTERFACE IDENT		
APPROVAL <i>J. G. ...</i>		APOLLO GUIDANCE COMPUTER		
NASA APPROVAL <i>J. G. ...</i>	CODE IDENT NO.	SIDE	NASA DRAWING NO.	
		D	1006060	
M.I.T. APPROVAL <i>J. G. ...</i>	SCALE	WT	SHEET 6 OF 14	

NOTICE: WHEN GOVERNMENT SPECIFICATIONS OR STANDARDS ARE USED, THE GOVERNMENT SHALL BE RESPONSIBLE FOR THE RESULTS OF THE TESTING OF THE MATERIALS. THE GOVERNMENT SHALL NOT BE RESPONSIBLE FOR THE RESULTS OF THE TESTING OF THE MATERIALS. THE GOVERNMENT SHALL NOT BE RESPONSIBLE FOR THE RESULTS OF THE TESTING OF THE MATERIALS.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
1	RELEASED CLASS A PER TORR 00084	10/30/62	W. J. W. W.



NOTES: 1-INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327



QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIG NO
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS CONTRACT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>W. J. W. W.</i> CHECKED <i>W. J. W. W.</i> APPROVAL <i>W. J. W. W.</i>		AGC INPUTS LINK INTERFACE IDENT APOLLO GUIDANCE COMPUTER	
HEAT TREATMENT FINISH		NASA APPROVAL <i>W. J. W. W.</i> MIT APPROVAL <i>W. J. W. W.</i>	NASA DRAWING NO 10000-50
APPLICATION		SCALE	WT

NOTES: - UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES  
FRACTIONS ARE TO BE SHOWN AS DECIMALS  
TOLERANCES ARE TO BE SHOWN AS DECIMALS  
DO NOT SCALE THIS DRAWING  
MATERIAL  
HEAT TREATMENT  
FINAL FINISH

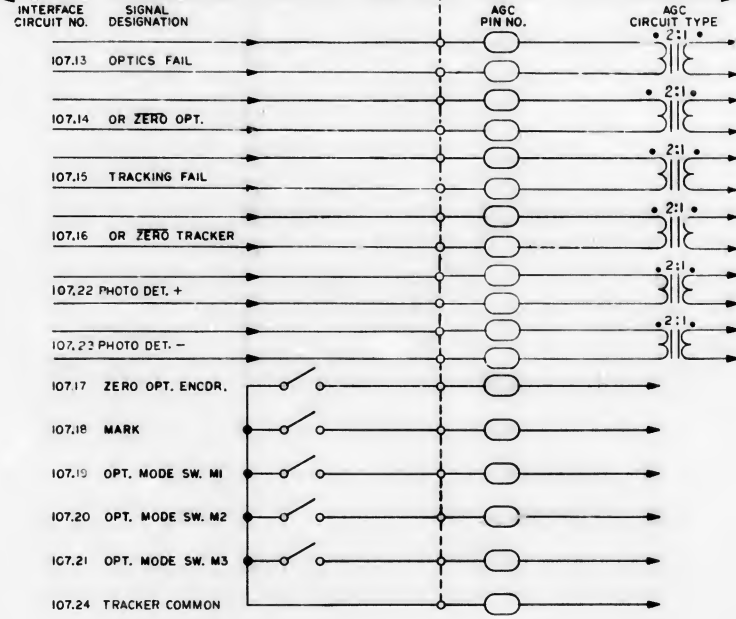
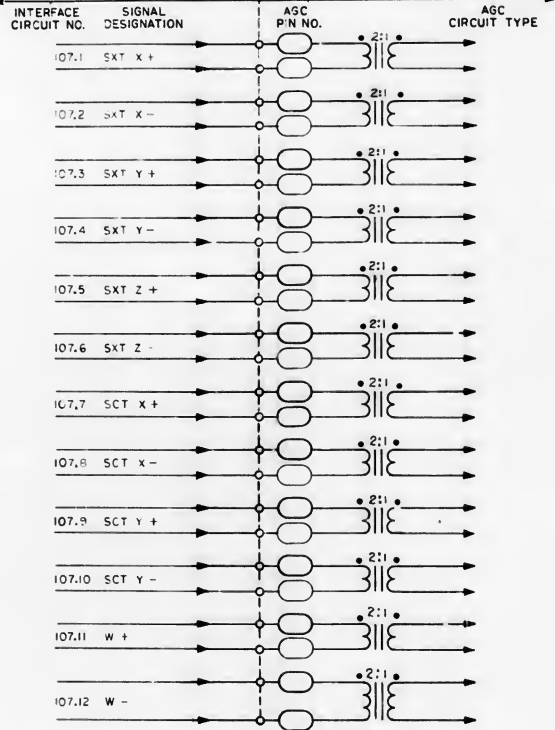
TRK  
(REF)

AGC

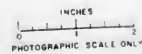
TRK  
(REF)

AGC

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
1	RELEASED CLASS A PER DRR 00044	10/11/64	WJL



NOTES:  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327.

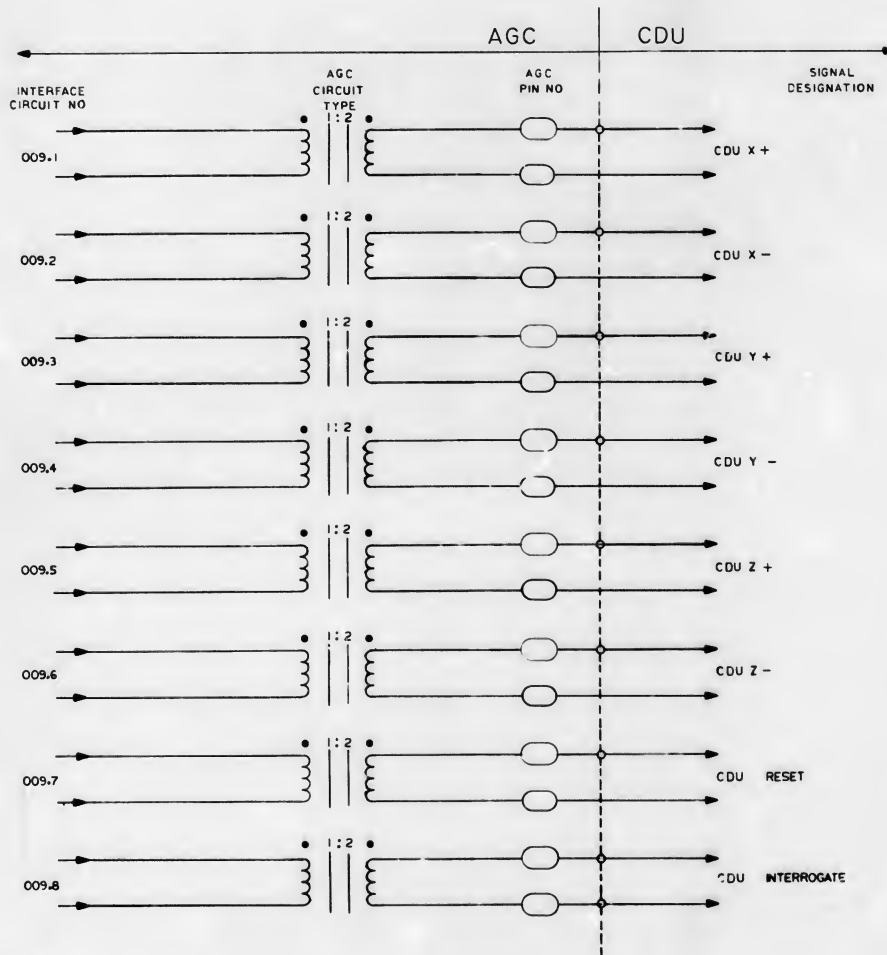


QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Ray Kelly</i> DATE <i>8-22-64</i>		AGC INPUTS	
CHECKED <i>Joe B. Bost</i>		TRACKING INTERFACE IDENT	
APPROVAL <i>John C. Hall</i>		APOLLO GUIDANCE COMPUTER	
NASA APPROVAL <i>W. J. Hall</i>		CODE IDENT NO	NASA DRAWING NO
MIT APPROVAL <i>W. J. Hall</i>		D	1006060
SCALE <i>1/4"</i>		WT	SHEET 7 OF 4

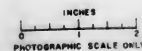


1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
(14)	RELEASED CLASS A PER TORR 00054	103062 11/1/82	y/k



- NOTES :
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327



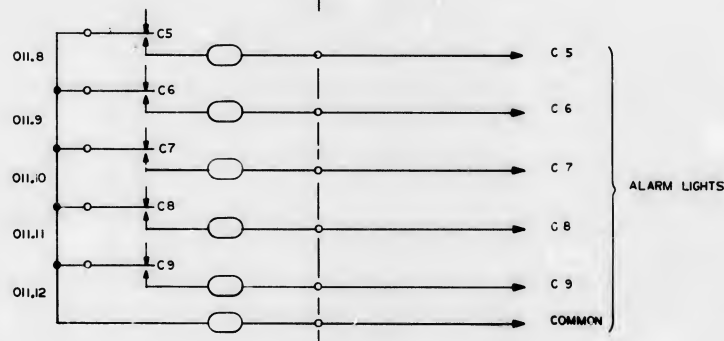
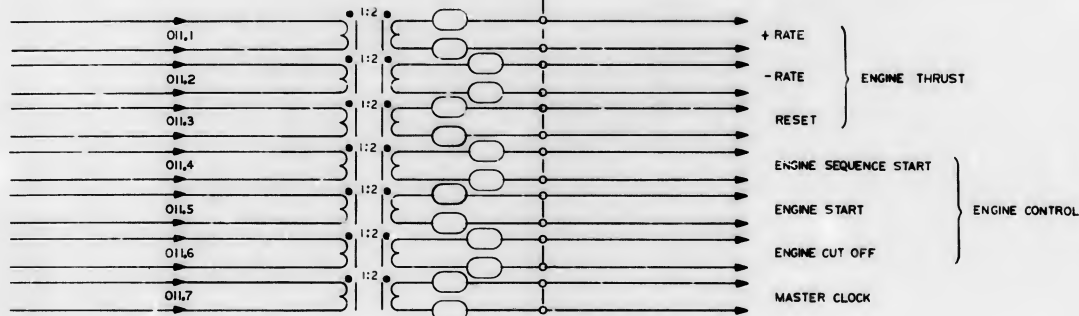
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS    DECIMALS    ANGLES ± .001 ± .005 ± .010 ± .015 ± .020 ± .030 ± .040 ± .050 ± .060 ± .070 ± .080 ± .090 ± .100 ± .125 ± .150 ± .175 ± .200 ± .250 ± .300 ± .375 ± .500 ± .625 ± .750 ± .875 ± 1.000 ± 1.250 ± 1.500 ± 1.750 ± 2.000 ± 2.500 ± 3.000 ± 3.750 ± 4.000 ± 5.000 ± 6.000 ± 7.000 ± 8.000 ± 9.000 ± 10.000 ± 12.500 ± 15.000 ± 17.500 ± 20.000 ± 25.000 ± 30.000 ± 37.500 ± 40.000 ± 50.000 ± 60.000 ± 70.000 ± 80.000 ± 90.000 ± 100.000 ± 125.000 ± 150.000 ± 175.000 ± 200.000 ± 250.000 ± 300.000 ± 375.000 ± 400.000 ± 500.000 ± 600.000 ± 700.000 ± 800.000 ± 900.000 ± 1000.000 ± 1250.000 ± 1500.000 ± 1750.000 ± 2000.000 ± 2500.000 ± 3000.000 ± 3750.000 ± 4000.000 ± 5000.000 ± 6000.000 ± 7000.000 ± 8000.000 ± 9000.000 ± 10000.000 ± 12500.000 ± 15000.000 ± 17500.000 ± 20000.000 ± 25000.000 ± 30000.000 ± 37500.000 ± 40000.000 ± 50000.000 ± 60000.000 ± 70000.000 ± 80000.000 ± 90000.000 ± 100000.000 ± 125000.000 ± 150000.000 ± 175000.000 ± 200000.000 ± 250000.000 ± 300000.000 ± 375000.000 ± 400000.000 ± 500000.000 ± 600000.000 ± 700000.000 ± 800000.000 ± 900000.000 ± 1000000.000 ± 1250000.000 ± 1500000.000 ± 1750000.000 ± 2000000.000 ± 2500000.000 ± 3000000.000 ± 3750000.000 ± 4000000.000 ± 5000000.000 ± 6000000.000 ± 7000000.000 ± 8000000.000 ± 9000000.000 ± 10000000.000 ± 12500000.000 ± 15000000.000 ± 17500000.000 ± 20000000.000 ± 25000000.000 ± 30000000.000 ± 37500000.000 ± 40000000.000 ± 50000000.000 ± 60000000.000 ± 70000000.000 ± 80000000.000 ± 90000000.000 ± 100000000.000 ± 125000000.000 ± 150000000.000 ± 175000000.000 ± 200000000.000 ± 250000000.000 ± 300000000.000 ± 375000000.000 ± 400000000.000 ± 500000000.000 ± 600000000.000 ± 700000000.000 ± 800000000.000 ± 900000000.000 ± 1000000000.000 ± 1250000000.000 ± 1500000000.000 ± 1750000000.000 ± 2000000000.000 ± 2500000000.000 ± 3000000000.000 ± 3750000000.000 ± 4000000000.000 ± 5000000000.000 ± 6000000000.000 ± 7000000000.000 ± 8000000000.000 ± 9000000000.000 ± 10000000000.000 ± 12500000000.000 ± 15000000000.000 ± 17500000000.000 ± 20000000000.000 ± 25000000000.000 ± 30000000000.000 ± 37500000000.000 ± 40000000000.000 ± 50000000000.000 ± 60000000000.000 ± 70000000000.000 ± 80000000000.000 ± 90000000000.000 ± 100000000000.000 ± 125000000000.000 ± 150000000000.000 ± 175000000000.000 ± 200000000000.000 ± 250000000000.000 ± 300000000000.000 ± 375000000000.000 ± 400000000000.000 ± 500000000000.000 ± 600000000000.000 ± 700000000000.000 ± 800000000000.000 ± 900000000000.000 ± 1000000000000.000 ± 1250000000000.000 ± 1500000000000.000 ± 1750000000000.000 ± 2000000000000.000 ± 2500000000000.000 ± 3000000000000.000 ± 3750000000000.000 ± 4000000000000.000 ± 5000000000000.000 ± 6000000000000.000 ± 7000000000000.000 ± 8000000000000.000 ± 9000000000000.000 ± 10000000000000.000 ± 12500000000000.000 ± 15000000000000.000 ± 17500000000000.000 ± 20000000000000.000 ± 25000000000000.000 ± 30000000000000.000 ± 37500000000000.000 ± 40000000000000.000 ± 50000000000000.000 ± 60000000000000.000 ± 70000000000000.000 ± 80000000000000.000 ± 90000000000000.000 ± 100000000000000.000 ± 125000000000000.000 ± 150000000000000.000 ± 175000000000000.000 ± 200000000000000.000 ± 250000000000000.000 ± 300000000000000.000 ± 375000000000000.000 ± 400000000000000.000 ± 500000000000000.000 ± 600000000000000.000 ± 700000000000000.000 ± 800000000000000.000 ± 900000000000000.000 ± 1000000000000000.000 ± 1250000000000000.000 ± 1500000000000000.000 ± 1750000000000000.000 ± 2000000000000000.000 ± 2500000000000000.000 ± 3000000000000000.000 ± 3750000000000000.000 ± 4000000000000000.000 ± 5000000000000000.000 ± 6000000000000000.000 ± 7000000000000000.000 ± 8000000000000000.000 ± 9000000000000000.000 ± 10000000000000000.000 ± 12500000000000000.000 ± 15000000000000000.000 ± 17500000000000000.000 ± 20000000000000000.000 ± 25000000000000000.000 ± 30000000000000000.000 ± 37500000000000000.000 ± 40000000000000000.000 ± 50000000000000000.000 ± 60000000000000000.000 ± 70000000000000000.000 ± 80000000000000000.000 ± 90000000000000000.000 ± 100000000000000000.000 ± 125000000000000000.000 ± 150000000000000000.000 ± 175000000000000000.000 ± 200000000000000000.000 ± 250000000000000000.000 ± 300000000000000000.000 ± 375000000000000000.000 ± 400000000000000000.000 ± 500000000000000000.000 ± 600000000000000000.000 ± 700000000000000000.000 ± 800000000000000000.000 ± 900000000000000000.000 ± 10000000000000	
--	--

•

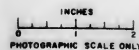


S/C

INTERFACE CIRCUIT NO.	AGC CIRCUIT TYPE	AGC PIN NO.	SIGNAL DESIGNATION
-----------------------	------------------	-------------	--------------------



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FR - THOUS    DECIMALS    ANGLES DO NOT SCALE THIS DRAWING MATERIAL	M I T INSTRUMENTATION LAB CHAMBERLAIN BLVD DRAWE 40    10/27/62 CHECKED <i>[Signature]</i> APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>		MANNED SPACECRAFT CENTER HOUSTON, TEXAS AGC OUTPUTS S/C INTERFACE IDENT APOLLO GUIDANCE COMPUTER	
	HEAT TREATMENT <i>[Signature]</i> NASA APPROVAL <i>[Signature]</i> MIT APPROVAL <i>[Signature]</i>		CODE IDENT NO. <i>[Signature]</i> SIZE <i>[Signature]</i> NASA DRAWING NO. 1006060 D <i>[Signature]</i> SCALE <i>[Signature]</i> WT <i>[Signature]</i> SHEET 11 OF 14	
NEXT ASSY    USED ON APPLICATION	FINAL FINISH <i>[Signature]</i>			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS # .# # # # # # # # # # DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT NEXT ASSY USED ON APPLICATION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS # .# # # # # # # # # # DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT NEXT ASSY USED ON APPLICATION	MT INSTRUMENTATION LAB CHASSIS RISE DES. NO. 1027251		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		DRAWING NO. 1027251-1 DATE 10/2/68 APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>		AGC OUTPUTS DISPLAY INTERFACE IDENT APOLLO GUIDANCE COMPUTER	
		NASA APPROVAL <i>[Signature]</i> MT APPROVAL <i>[Signature]</i>	CODE IDENT NO. <u>    </u> SIZE <u>    </u>	NASA DRAWING NO. 1006060	SHEET 12 OF 14

050500

A

Diagram illustrating the AGC (Automatic Gain Control) circuit for the LNK (Line Noise) section.

The diagram is divided into two main sections by a vertical dashed line: AGC (Automatic Gain Control) on the left and LNK (Line Noise) on the right.

**AGC Section:**

- INTERFACE CIRCUIT NO. 013.1:** Two input lines enter from the left, connected to a transformer.
- AGC CIRCUIT TYPE 1:2:** The transformer has a 1:2 turns ratio.
- AGC PIN NO.:** Two output lines from the transformer connect to two pins labeled "AGC PIN NO.".

**LNK Section:**

- SIGNAL DESIGNATION:** Two output lines exit to the right, labeled "DIG. TEL. OUT." and "TEMP. TEL.".
- TEMP. TEL.:** The bottom output line is labeled "TEMP. TEL." and includes a thermistor symbol (labeled 013.2) in series.

INCHES

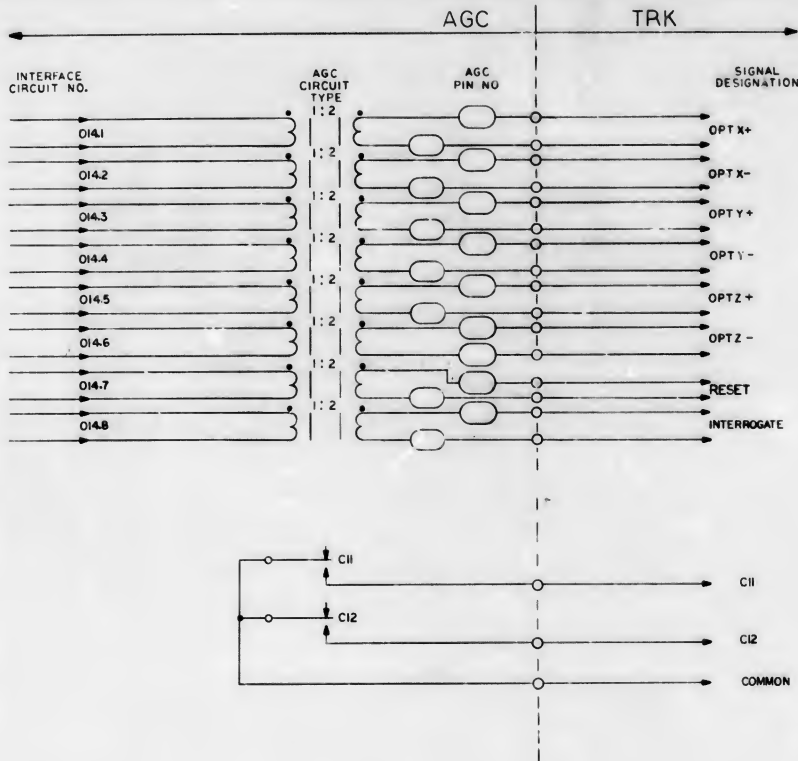
0 1 2

PHOTOGRAPHIC SCALE ONLY

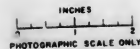
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
(54)	RELEASED CLASS A PER TORR 00084	7/2/02	WAR

QTY REQ		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO	
				LIST OF MATERIALS			
		M.I.T. INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
		DWS OR CONTRACT					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		DRAWN BY <i>Gandy</i> DATE <i>2/22/62</i>		AGC OUTPUTS			
		CHECKED BY <i>W. J. Hall</i>		LNK INTERFACE IDENT			
DO NOT SCALE THIS DRAWING		APPROVAL <i>W. J. Hall</i>		APOLLO GUIDANCE COMPUTER			
MATERIAL <i>11</i>		APPROVAL <i>W. J. Hall</i>					
HEAT TREATMENT <i>11</i>		NASA APPROVAL <i>100-35-62</i>		CODE IDENT NO. <i>D</i>		NASA DRAWING NO. <i>1006060</i>	
NEXT ASSY USED ON		MIT APPROVAL <i>W. J. Hall</i>		SCALE <i>10/1</i>		SHEET <i>13</i> OF <i>14</i>	
APPLICATION							





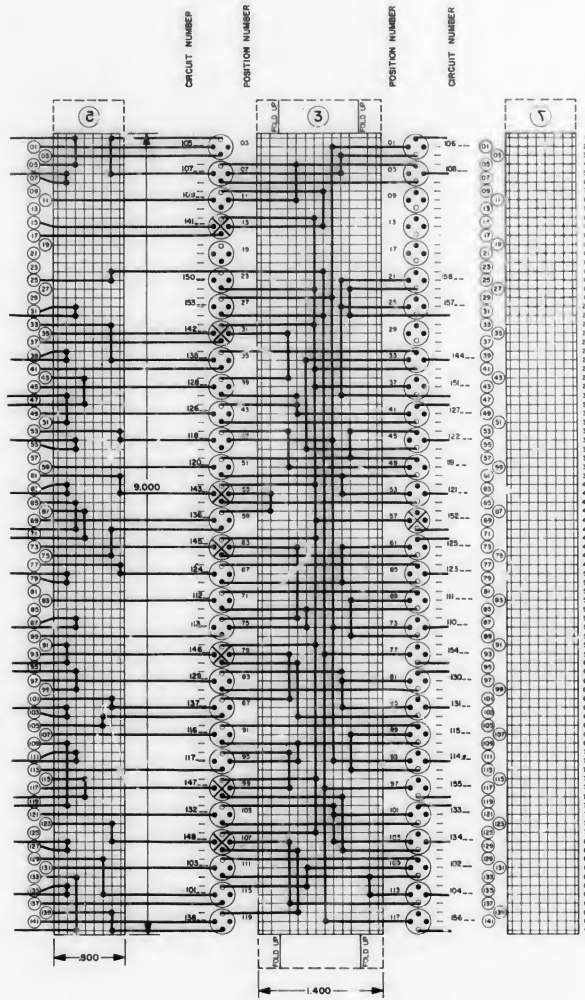
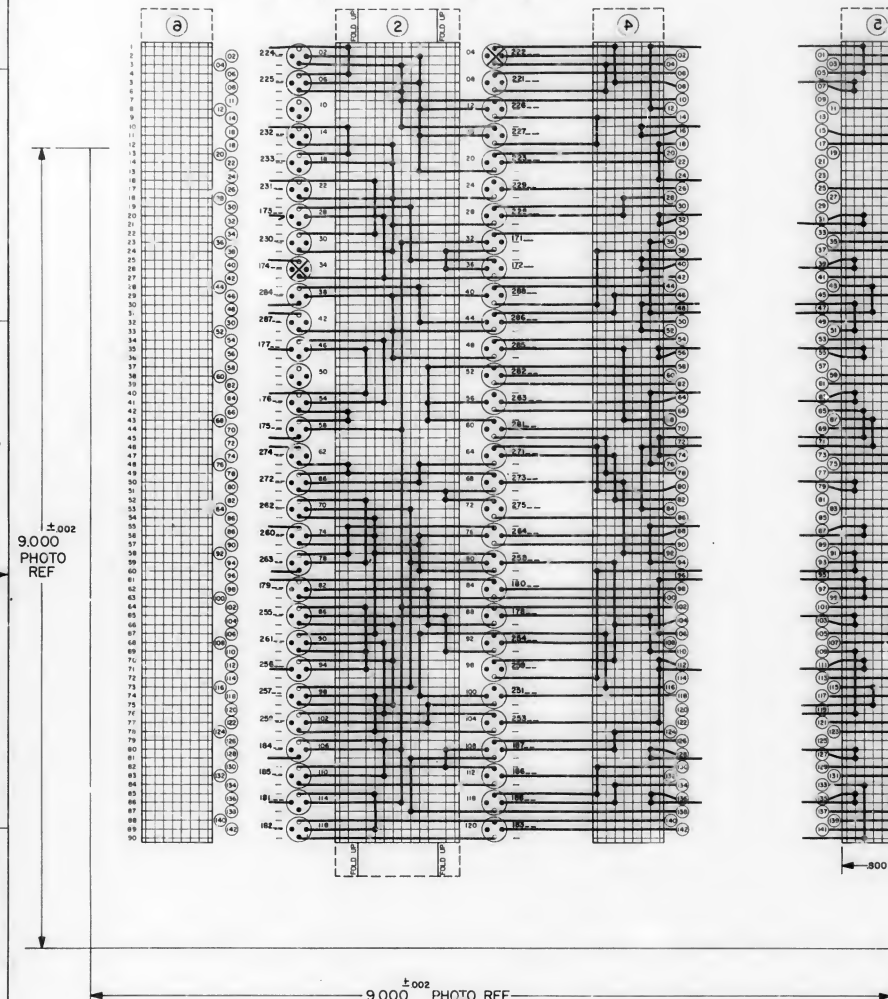
NOTES  
 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
 PRESCRIBED BY MIL - D - 70327



REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
1	RELEASED CLASS A PER TDRR 0008H	1/1/62	WLR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FINO NO
LIST OF MATERIALS			
INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>W. J. H. H.</i> DATE <i>10-3-62</i>		AGC OUTPUTS	
CHECKED BY <i>W. J. H. H.</i>		TRK INTERFACE IDENT	
APPROVAL BY <i>W. J. H. H.</i>		APOLLO GUIDANCE COMPUTER	
NASA APPROVAL <i>W. J. H. H.</i>	CODE IDENT NO.	SIZE	NASA DRAWING NO.
MIT APPROVAL <i>W. J. H. H.</i>	D	D	1006060
SCALE		WT	SHEET 14 OF 14

1. THIS DRAWING IS THE PROPERTY OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

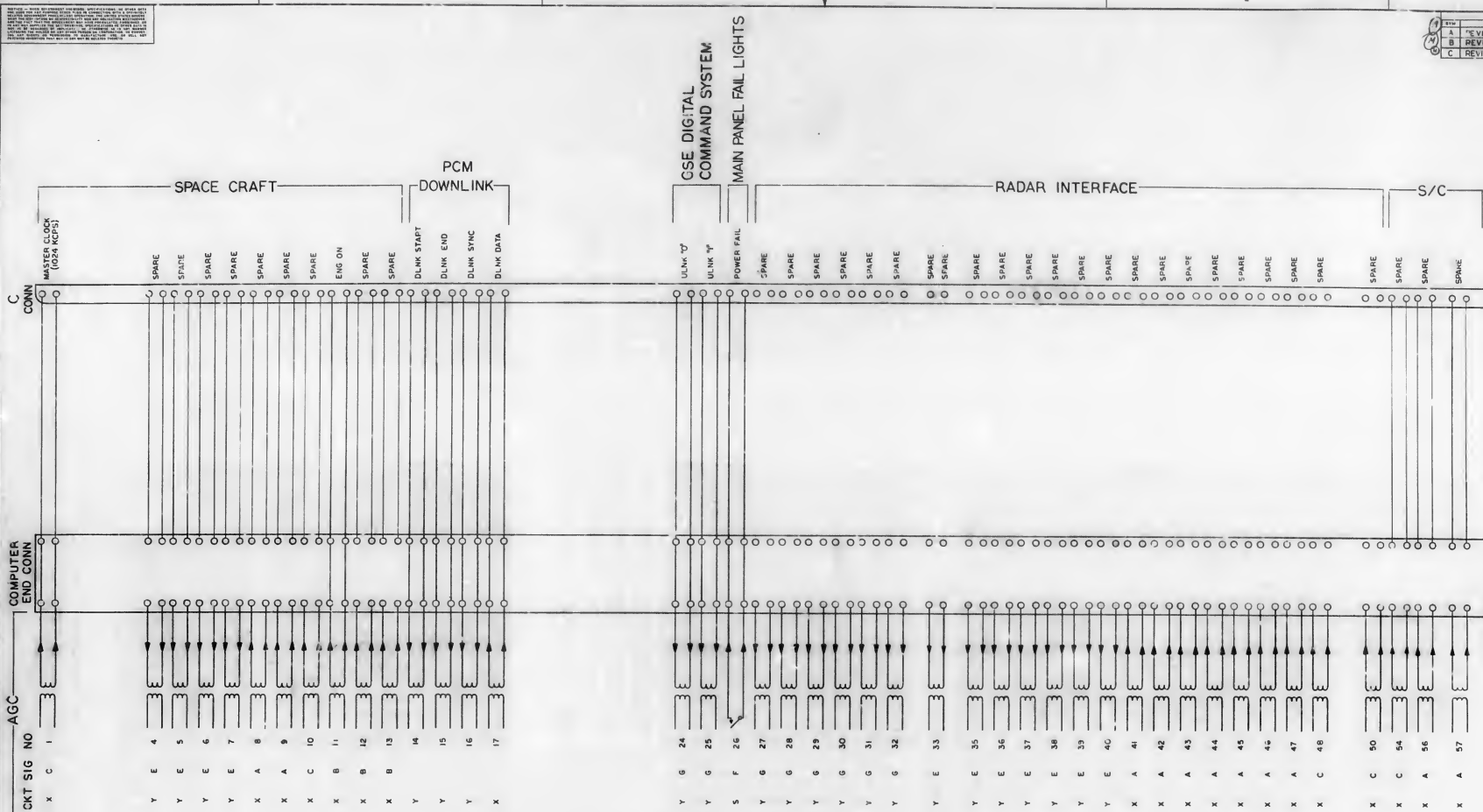


FOR INFORMATION ONLY  
CLASS B RELEASE TDR No. 1.5.14 D/TE

- NOTES -
- 1- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70527
  - 2- ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
  - 3- MAKE 1/8" STER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
  - 4- CUT TO WITHIN .010 OF TRIMLINE
  - 5- MATERIAL- .007 THICK PLASTIC SHEETS, SENSITIZED, DIMENSIONALLY STABLE PER L-P-0051F (NAVY-AER) TYPE II, CLASS C
  - 6- INDICATE "OR CIRCUIT" IF 3VDC LEAD NOT CONNECTED.

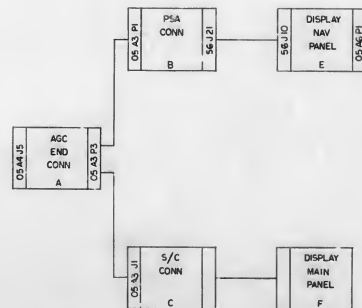
QTY REQD	PART OR IDENTIFYING NO.	NAME (L, F, I, S) DESCRIPTION	NO. QTY
MILITARY INSTRUMENTATION LAB CHANGING ROOM		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DRAWN BY: <i>W. J. P.</i> DATE: 7-7-63		ARITHMETIC STICK NO. 16	
CHECKED BY: <i>W. J. P.</i> DATE: 7-7-63		WIRING DIAGRAM	
APPROVAL: <i>W. J. P.</i>		SEE NOTE 5	
NASA APPROVAL: <i>W. J. P.</i>		CODE IDENT NO.	SIZE
HEAT TREATMENT		E	1006075
NEAT ASBY		SCALE 2/1	1
APPLICATION		SHEET 1 OF 1	

1006075



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327
2. SYMBOL  DENOTES SIGNAL GND, NOT CASE GND



**DRAWING**  
**NO.**

CIRCUIT TYPE

TRANSFORMER OUTPUT	1006009
TRANSFORMER INPUT	1006087
RESISTANCE INPUT/OUTPUT	1006088
MICROLOGIC INPUT	1006088
TRANSISTOR OUTPUT	1006088
WIRE INPUT/OUTPUT	N/A
CONTACT CLOSURE	1006089
TRANSISTOR INPUT	1006089

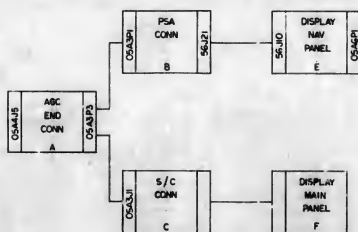
SIGNAL TYPE

A	CONTROLLED RATE
B	DISCRETE RATE
C	FIXED FREQUENCY
D	D. C.
E	OUT BITS/IN BITS
F	ALARM DETECTION
G	COUNTER

X Y R K T W S Q

QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN NO			
LIST OF MATERIALS									
M I T INSTRUMENTATION LAB CHICAGO				MANHATTAN SPACECRAFT CENTER HOUSTON 15848					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES .125 .063 .031 .015 .008 .004 .002 .001 .0005 .0002 DO NOT SCALE THIS DRAWING MATERIAL _____				DRAWING <u>DATE</u> <u>DATE</u> CHICAGO <u>DATE</u> <u>DATE</u> APPROVAL <u>DATE</u> <u>DATE</u> APPROVAL <u>DATE</u> <u>DATE</u>				AGC INTERFACE AGC TO SPACECRAFT	
NEXT TREATMENT _____				NADA APPROVAL _____		CODE GENT NO _____		SIZE E	NADA DRAWING NO 1006076
NEXT ASSY _____		USED ON _____		MET APPROVAL _____		SCALE _____		1/1	SHEET 1 OF 1
APPLICATION _____									

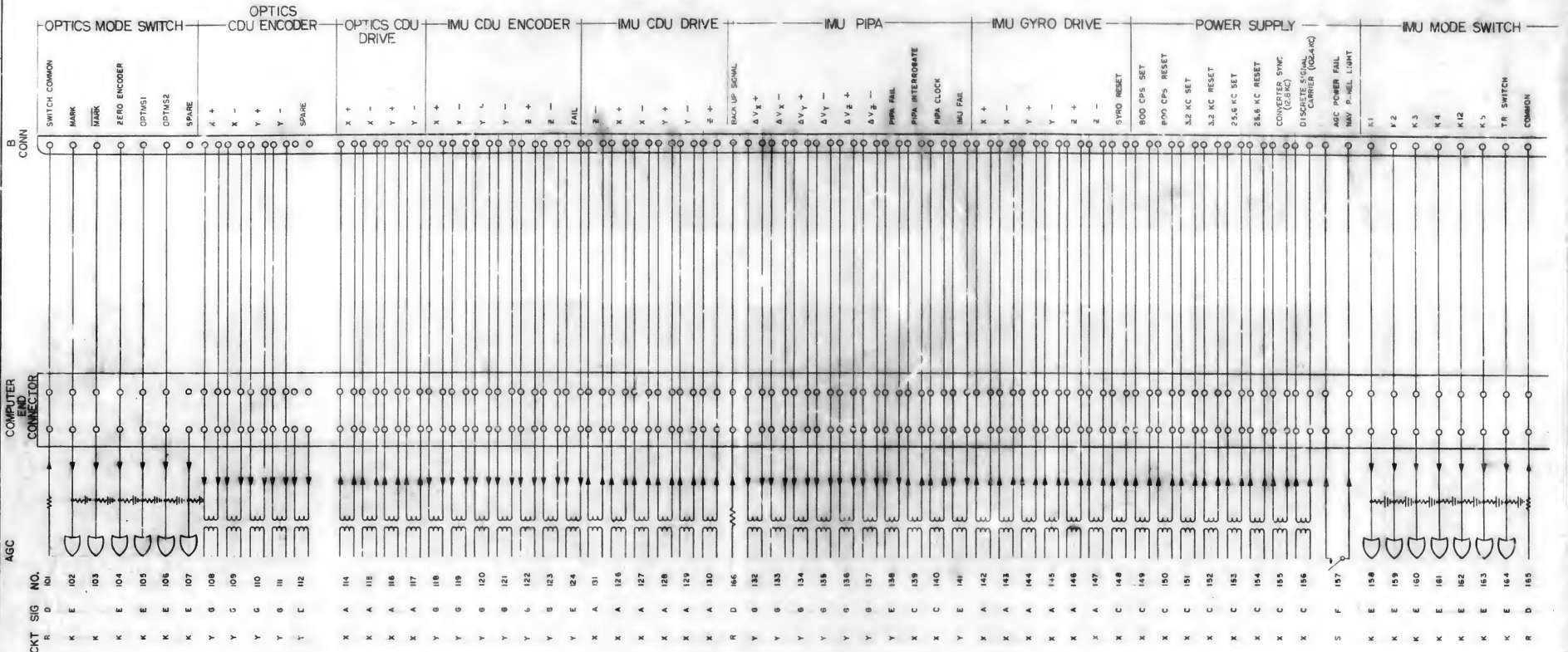




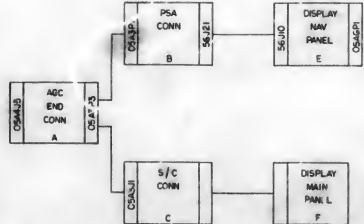
QTY		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		NO.	
LIST OF MATERIALS							
<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES FIVE FRACTIONS DECIMALS ANGLES     //     //     // DO NOT SCALE THIS DRAWING MATERIAL               // DIE TREATMENT               // NEXT ASSY USED ON APPLICATION FINISH:</p> </div> <div style="width: 60%; border-left: 1px solid black; padding-left: 10px;"> <p align="center"><b>S I T Y</b></p> <p><b>INSPECTION/REVISION LAB</b></p> <hr/> <p>DRAWN <u>E. Goss</u> DATE <u>1-2-73</u> CHECKED <u>J. H. Smith</u> BY <u>WJL</u> APPROVAL <u>Donald Smith</u> DATE _____ APPROVAL <u>[Signature]</u> DATE _____</p> <p>NASA APPROV. _____ CODE CONT. NO. _____ SIZE _____ NASA DRAWING NO. _____</p> <p align="right"><b>1006077</b></p> </div> </div>							
MANNED SPACECRAFT CENTER				INDUSTRIAL TEASAR			
AGC INTERFACE				AGC TO DSKY			
SCALE				WT			
OF				OF			

THIS DRAWING IS THE PROPERTY OF THE AIR FORCE AND IS LOANED TO YOU. IT IS TO BE RETURNED TO THE AIR FORCE WHEN NO LONGER REQUIRED. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE AIR FORCE. IT IS TO BE KEPT IN A SAFE PLACE AND NOT TO BE EXPOSED TO WEATHER OR OTHER CONDITIONS WHICH MAY DAMAGE IT. IT IS TO BE PROTECTED FROM FIRE, FLOODING, AND OTHER HAZARDS. IT IS TO BE KEPT IN A CLEAN AND DRY PLACE. IT IS TO BE KEPT IN A SAFE PLACE AND NOT TO BE EXPOSED TO WEATHER OR OTHER CONDITIONS WHICH MAY DAMAGE IT. IT IS TO BE PROTECTED FROM FIRE, FLOODING, AND OTHER HAZARDS. IT IS TO BE KEPT IN A CLEAN AND DRY PLACE.

REV	DATE	DESCRIPTION
A	10/10/67	REVISED PER TORR 10073
B	10/10/67	REVISED PER TORR 10073
C	10/10/67	REVISED PER TORR 10073
D	10/10/67	REVISED PER TORR 10073
E	10/10/67	REVISED PER TORR 10073
F	10/10/67	REVISED PER TORR 10073



NOTES:  
1- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-D-70327  
2- SYMBOL DENOTES SIGNAL ONLY, NOT CASE END



CIRCUIT TYPE DRAWING NO.  
1006078  
1006079  
1006080  
1006081  
1006082  
1006083  
1006084  
1006085  
1006086  
1006087  
1006088  
1006089  
1006090  
1006091  
1006092  
1006093  
1006094  
1006095  
1006096  
1006097  
1006098  
1006099  
1006100

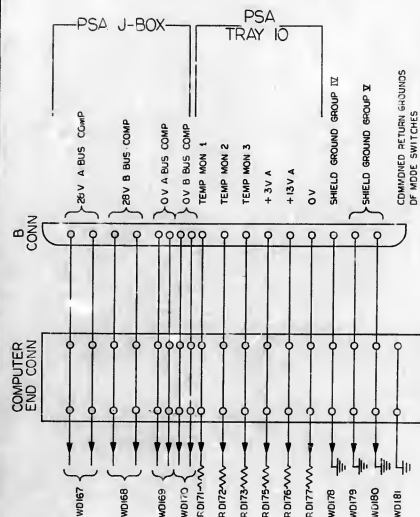
SIGNAL TYPE  
A CONTROLLED RATE  
B FREQUENCY  
C FIXED FREQUENCY  
D DEBIT RATE/INPUT BITS  
E ALARM DETECTION  
F COUNTER

QTY REQD	PART OR IDENTIFYING NO	DESCRIPTION OR IDENTIFICATION
LIST OF MATERIALS		
MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
AGC INTERFACE AGC TO PSA JUNCTION BOX		
DATE	DESIGNED BY	CHECKED BY
10/10/67	J. J. J.	J. J. J.
APPROVED BY	DATE	SCALE
J. J. J.	10/10/67	1:1
SHEET 1 OF 2		



THIS DRAWING IS THE PROPERTY OF THE AIR FORCE. IT IS TO BE KEPT IN THE OFFICE OF THE ENGINEER IN CHARGE OF THE PROJECT. IT IS TO BE RETURNED TO THE OFFICE OF THE ENGINEER IN CHARGE OF THE PROJECT WHEN THE PROJECT IS COMPLETED. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE AIR FORCE.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
C	SECOND SHEET ADDED PER TDRR 03113	03/13	WJL
D	REVISED PER TDRR 04047	04/04	WJL
E	REVISED PER TDRR 07072	07/07	WJL
F	REVISED PER TDRR 07072	07/07	WJL



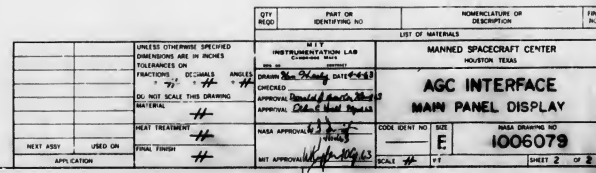
REV C THIS SHEET ADDED

MASTER

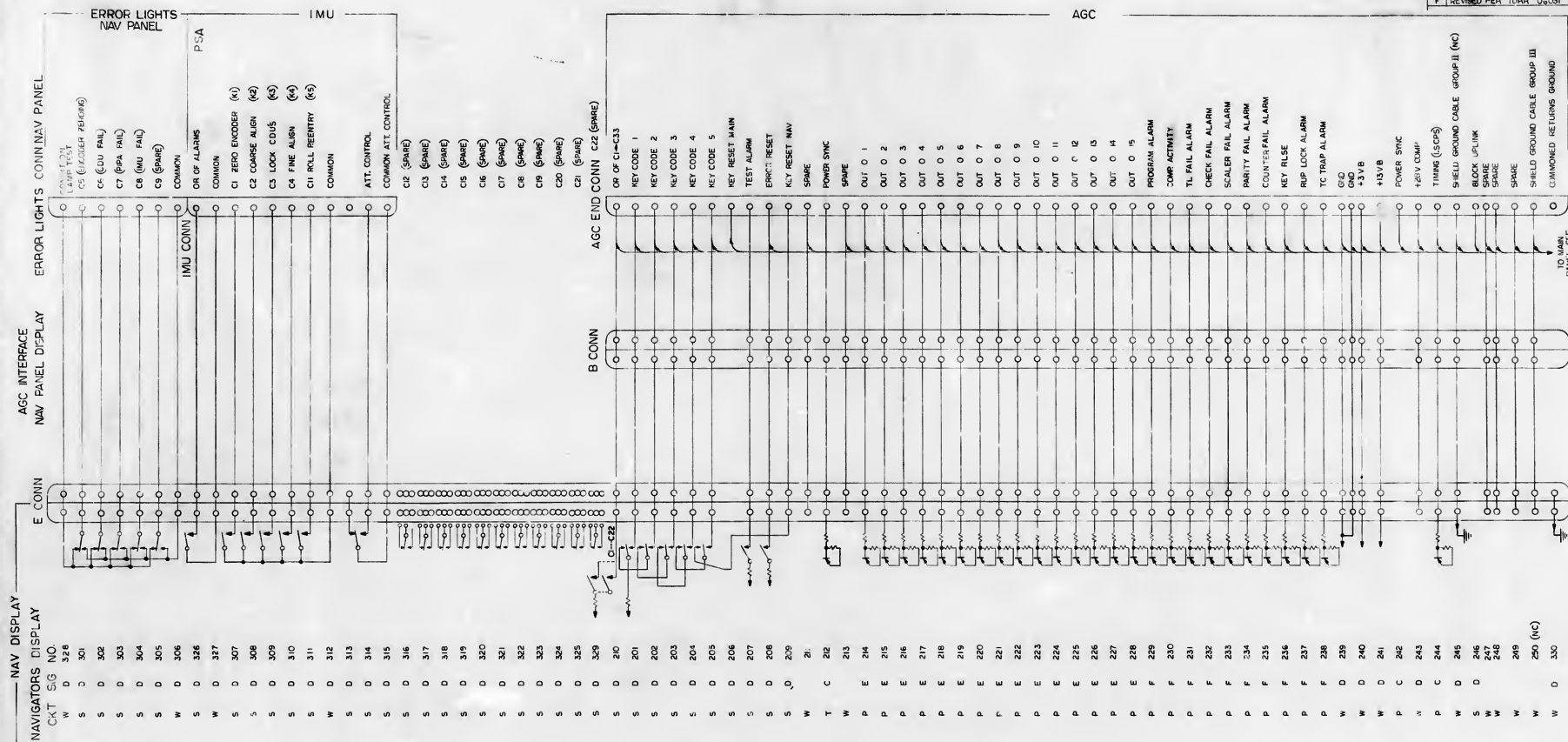
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINISH NEXT ASSY USED ON APPLICATION			
INSTRUMENTATION LAB MANNED SPACECRAFT CENTER AGC INTERFACE AGC TO PSA JUNCTION BOX CODE IDENT NO. <b>E</b> SCALE <b>1:1</b> SHEET <b>2 OF 2</b>			



REVISED <i>1000 0033</i>			
BY	DESCRIPTION	DATE	APPROVAL
A	CHANGED PER TORR <i>00215</i>	<i>10/21/80</i>	<i>W</i>
B	REVISED PER TORR <i>00215</i>	<i>10/21/80</i>	<i>030 W</i>
C	REVISED PER TORR <i>00314</i>	<i>11/21/80</i>	<i>W</i>
D	REVISED PER TORR <i>00033</i>	<i>11/21/80</i>	<i>W</i>
E	REVISED PER TORR <i>00033</i>	<i>11/21/80</i>	<i>W</i>
F	REVISED PER TORR <i>00635</i>	<i>11/21/80</i>	<i>W</i>
G	CHANGED PER TORR <i>00070</i>	<i>11/21/80</i>	<i>W</i>
DRAFTED BY CHK <i>CHK</i>			



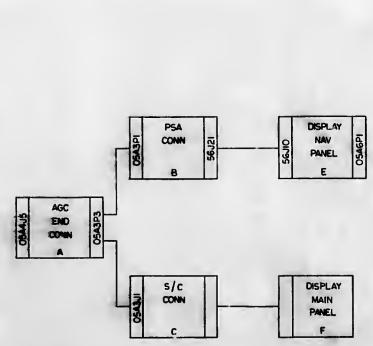
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
2. SYMBOL DENOTES SHIELDED CABLE, NOT CABLE AND GROUND



REVISIONS

REV	DESCRIPTION	DATE	INITIALS
A	CHANGED PER TORR 00752	10/2/75	W
B	CHANGED PER TORR 00752	10/2/75	W
C	CHANGED PER TORR 00752	10/2/75	W
D	CHANGED PER TORR 00752	10/2/75	W
E	REVISD PER TORR 00752	10/2/75	W
F	REVISD PER TORR 00752	10/2/75	W

NOTES  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
2. SYMBOL DENOTES SHIELDED CABLE, NOT CABLE AND GROUND



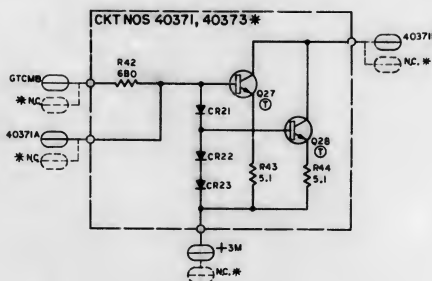
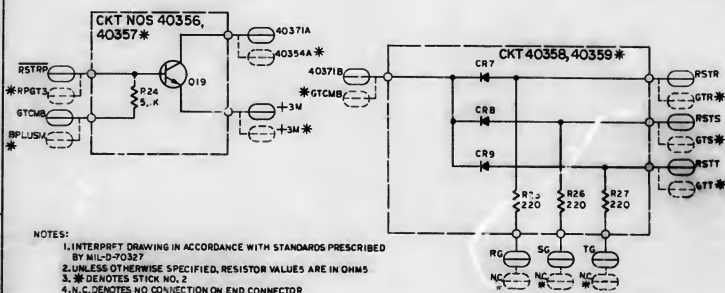
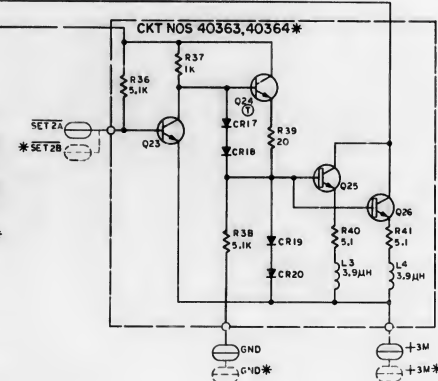
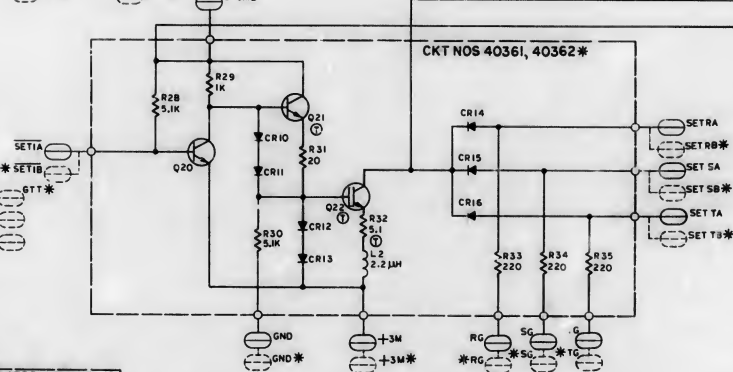
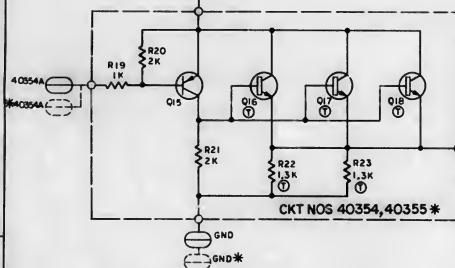
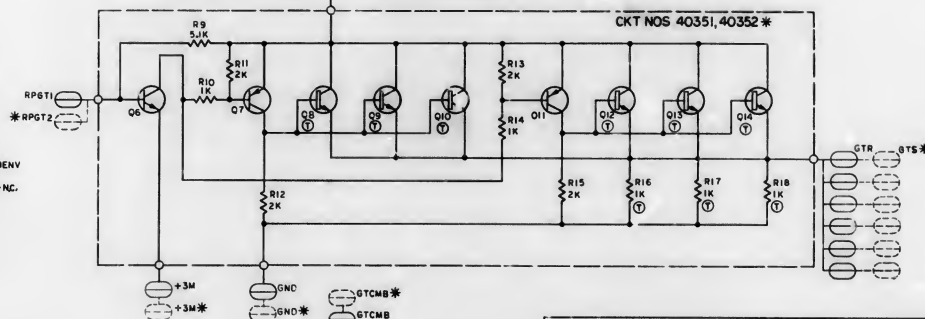
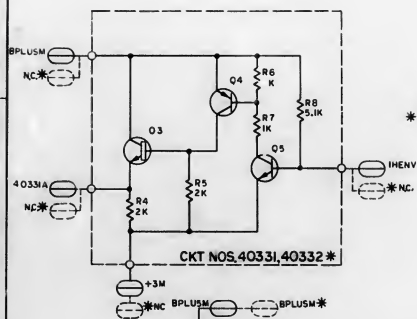
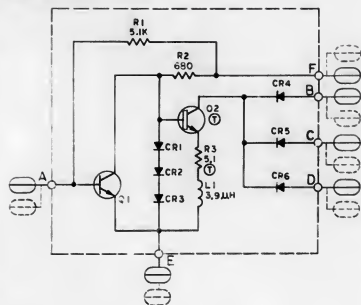
DRAWING NO. 1006080  
CIRCUIT TYPE  
TRANSDUCER OUTPUT  
RESISTANCE INPUT/OUTPUT  
WIRE CLOSURE INPUT/OUTPUT  
TRANSISTOR INPUT  
TRANSISTOR OUTPUT

SIGNAL TYPE  
A CONTROLLED RATE  
B DISCRETE RATE  
C FREQUENCY  
D DC  
E OUTPUT BITS/INPUT BITS  
F ALARM DETECTION  
G COUNTER

QTY		PART OR IDENTIFYING NO.		NOMENCLATURE OR SKETCH	
LIST OF MATERIALS					
MANNING SPACECRAFT CENTER HOUSTON, TEXAS					
AGC INTERFACE NAV PANEL DISPLAY					
NASA DRAWING NO. 1006080					
SCALE: 1:1					
SHEET 1 OF 1					



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±		CITY INSTRUMENTATION LAB CHANDLER, ARIZ DESG. NO. _____ DATE _____ DRAWN _____ DATE _____ CHECKED _____ APPROVAL _____ APPROVAL _____		MANHATTAN SPACECRAFT CENTER HOUSTON, TEXAS ABC TEST CONNECTOR	
		DO NOT SCALE THIS DRAWING MATERIAL		RASA APPROVAL <i>5/22/54</i> <i>5/11/54</i> SET APPROVAL <i>5/11/54</i>		COPE IDENT NO. _____ SIZE _____ RASA DRAWING NO. 1006081	
NEXT ASSY _____ USED ON _____		HEAT TREATMENT _____					
APPLICATION _____		FINISH _____		SCALE _____		SHEET _____ OF _____	



NOTES:

1. INTERPRY DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED, RESISTOR VALUES ARE IN OHMS
3. \* DENOTES STICK NO. 2
4. N.C. DENOTES NO CONNECTION ON END CONNECTOR

**FOR INFORMATION**

CLASS E RELEASE TDR No. 00691 DATE 1-22-63

QTY REQ		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN NO			
				LIST OF MATERIALS					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES .0001 .001 .01 .05 .1 .5 1 2 3 4 5 6 7 8 9 10 15 20 30 45 60 90 120 150 180 DO NOT SCALE THIS DRAWING MATERIAL <u>                    </u>				M T Y INSTRUMENTATION LAB CHECKED <u>                    </u> DATE <u>                    </u> APPROVAL <u>                    </u> APPROVAL <u>                    </u>				MAHNE SPACECRAFT CENTER HOUSTON, TEXAS  <h1>SCHEMATIC</h1> <h2>ROD DRIVER STICK</h2>	
HEAT TREATING <u>                    </u> FINISH <u>                    </u> NEXT ASSEMBLY USED ON <u>                    </u> APPLICATION <u>                    </u>				NASA APPROVAL <u>                    </u> DATE <u>                    </u> BY <u>                    </u> TEST APPROVAL <u>                    </u>				COO IDENT NO <u>                    </u> SIZE <u>                    </u> NASA DRAWING NO <u>                    </u> <u>                    </u>	
SCALE <u>                    </u>				WT <u>                    </u> SHEET <u>                    </u> OF <u>                    </u>					

NOTES: 1. THIS DRAWING IS THE PROPERTY OF THE MANITO SPACECRAFT CENTER AND IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED HEREIN. 2. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF THE MANITO SPACECRAFT CENTER. 3. THIS DRAWING IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE MANITO SPACECRAFT CENTER. 4. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF THE MANITO SPACECRAFT CENTER. 5. THIS DRAWING IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE MANITO SPACECRAFT CENTER.

REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING	CKT NO USED ON
R1	1006750-49	RESISTOR	5.1K		1/4 W	
R2	1006750-28		680			
R3	1006788-2		5.1			
R4	1006750-39		2K			40331AND 40332
R5	-39		2K			
R6	-39		2K			
R7	-32		1K			
R8	-49		5.1K			
R9	-49		5.1K			40331AND 40332
R10	-32		1K			
R11	-39		2K			
R12	-39		2K			
R13	-39		2K			
R14	-32		1K			
R15	-39		2K			
R16	-32		1K			
R17	-32		1K			
R18	-32		1K			
R19	-32		1K			40354AND 40355
R20	-39		2K			
R21	-39		2K			
R22	-35		1.3K			
R23	-35		1.3K			
R24	-49		5.1K			40356AND 40357
R25	-16		220			40358AND 40359
R26	-16		220			
R27	-16		220			
R28	-49		5.1K			40361AND 40362
R29	-32		1K			
R30	-49		5.1K			
R31	1010369-148		20			
R32	1006788-2		5.1			
R33	1006750-16		220			
R34	-16		220			
R35	-16		220			
R36	-49		5.1K			40363AND 40364
R37	-32		1K			
R38	-49		5.1K			
R39	1010369-148		20			
R40	1006788-2		5.1			
R41	1006788-2		5.1			
R42	1006750-28		680			40371AND 40373
R43	1006788-2		5.1			
R44	1006788-2		5.1			
L1	1006756-6	INDUCTOR	3.9 MH			
L2	-3		2.2 MH			40361AND 40362
L3	-6		3.9 MH			40363AND 40364
L4	-6		3.9 MH			40363AND 40364

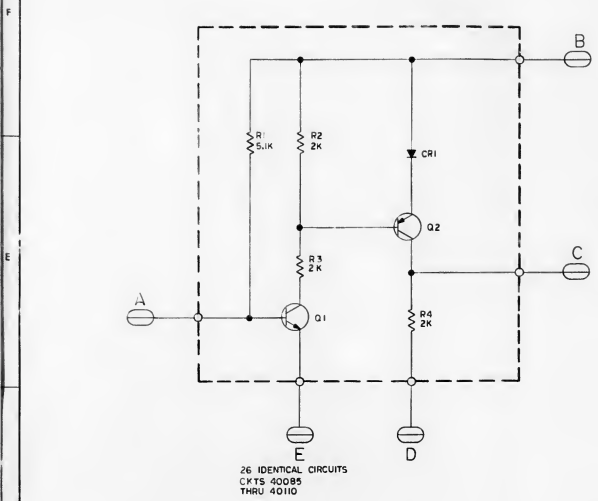
REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING	CKT NO USED ON
CR1	1006751	DIODE				
CR2						
CR3						
CR4						
CR5						
CR6						
CR7						40358AND 40359
CR8						
CR9						
CR10						40361AND 40362
CR11						
CR12						
CR13						
CR14						
CR15						
CR16						
CR17						40363AND 40364
CR18						
CR19						
CR20						
CR21						40371AND 40373
CR22						
CR23						
Q1	1006752	TRANSISTOR				
Q2	1006759					
Q3	1006759					40331AND 40332
Q4	1006753					
Q5	1006752					
Q6	1006752					40351AND 40352
Q7	1006753					
Q8	1006759					
Q9						
Q10						
Q11	1006753					
Q12	1006759					
Q13						
Q14						
Q15	1006753					40354AND 40355
Q16	1006759					
Q17						
Q18						
Q19	1006752					40356AND 40357
Q20						40361AND 40362
Q21						
Q22	1006759					
Q23	1006752					40363AND 40364
Q24	1006752					
Q25	1006759					
Q26						
Q27						40371AND 40373
Q28						40371AND 40373

FOR INFORMATION ONLY  
CLASS B RELEASE TDR No. 00671 DATE 3-77-63

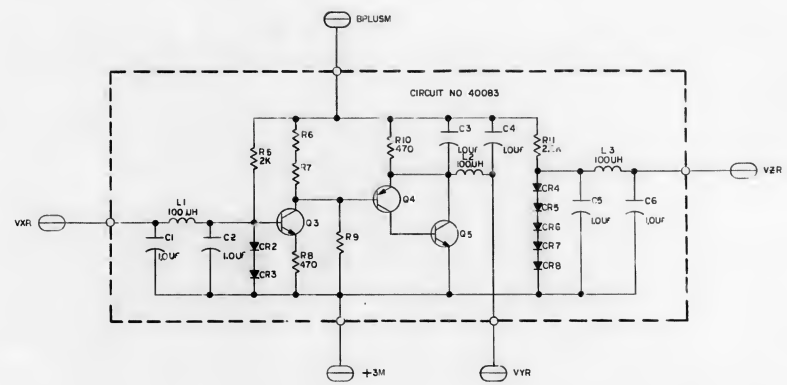
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIN NO
LIST OF MATERIALS			
INSTRUMENTATION LAB COMMERCIAL BUSH MANITO SPACECRAFT CENTER HOUSTON TEXAS			
SCHEMATIC			
ROPE DRIVER STICK			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL: H HEAT TREATMENT: H FINISH: H APPLICATION:		DRAWN: J. J. J. DATE: 1/1/63 CHECKED: J. J. J. DATE: 1/1/63 APPROVED: J. J. J. DATE: 1/1/63 MANITO APPROVAL: J. J. J. DATE: 1/1/63 MANITO APPROVAL: J. J. J. DATE: 1/1/63	
NEXT ASSY		USED ON	SCALE
APPLICATION		DATE	SHEET 2 OF 2



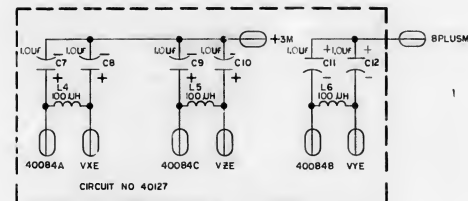
1. THIS DRAWING IS THE PROPERTY OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. 2. UNLESS OTHERWISE SPECIFIED, RESISTOR VALUES ARE IN OHMS.



26 IDENTICAL CIRCUITS  
CKTS 400B5  
THRU 40110



FOR INFORMATION ONLY  
CLASS B RELEASE (DR No. 00 627) DATE 5-27-63



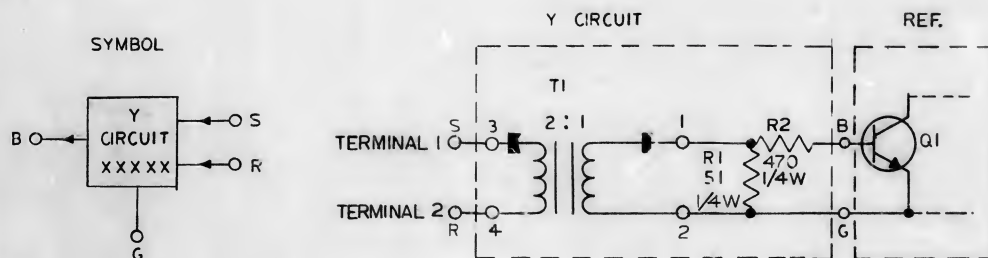
CIRCUIT NO	A					B					C					D					E				
	SIGNAL	IN	NO	PUL	NO	SIGNAL	IN	NO	PUL	NO	SIGNAL	IN	NO	PUL	NO	SIGNAL	IN	NO	PUL	NO	SIGNAL	IN	NO	PUL	NO
40015	S0F					BFCU5T					STB1														
40016	SBE										STB6														
40017	SD00										SDR00														
40018	SD01										SDR01														
40019	SD02										SDR02														
40020	SD03										SDR03														
40021	SD04										SDR04														
40022	SD05										SDR05														
40023	SD06										SDR06														
40024	SD07										SDR07														
40025	SD08										SDR08														
40026	SD09										SDR09														
40027	SD10										SDR10														
40028	SD11										SDR11														
40029	SD12										SDR12														
40030	SD13										SDR13														
40031	SD14										SDR14														
40032	SD15										SDR15														
40033	SD16										SDR16														
40034	SD17										SDR17														
40035	SD18										SDR18														
40036	SD19										SDR19														
40037	SD20										SDR20														
40038	SD21										SDR21														
40039	SD22										SDR22														
40040	SD23										SDR23														

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSIONS, ERRORS, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PROVIDED, OR IN ANY MANNER SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE DEEMED BY REPLACEMENT OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDING OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSIONS TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY MANNER BE RELATED THEREBY.

B 1006087

REVISIONS TORR 00736

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 01745	6/24/63	WJ
B	REVISED PER TORR 02053	7/17/63	RPK



REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-1	RESISTOR	51		1/4
R2	1006750-24	RESISTOR	470		1/4
T1	1006762	TRANSFORMER PULSE			

# NOTES:-

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE SPECIFIED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
		FRACTIONS DECIMALS ANGLES
		± ± ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
		FINAL FINISH
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWN. NO. CONTRACT			
DRAWN <u>Louis A. Lowe</u> DATE <u>2/13/63</u>		SCHEMATIC Y TRANSFORMER INPUT CIRCUIT	
CHECKED _____			
APPROVAL <u>Donald J. Bowler</u> 3/22/63			
APPROVAL <u>Edgar C. Hall</u> 4/1/63			
NASA APPROVAL <u>Jack Bernard</u>		CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL <u>W. H. Jr.</u> 3/26/63		SIZE C	1006087
SCALE <u>1/1</u>		WT	SHEET OF

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE CONSULATED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWING, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY INDICATING OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING THE RIGHTS OF PATENT OR TO MANUFACTURE, USE, OR SELL ANY INVENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

V 8809001

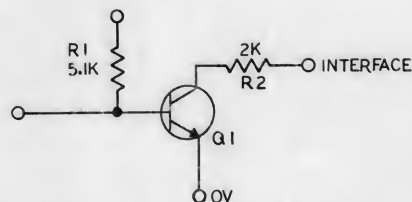
REVISIONS TDIR 01396

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDOR 01746	1/24/63	PCW WLL

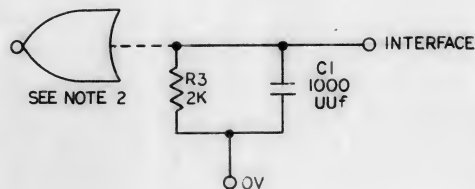
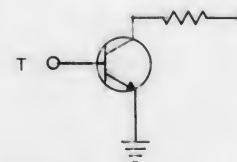
# CIRCUIT TYPE

# NAME

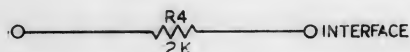
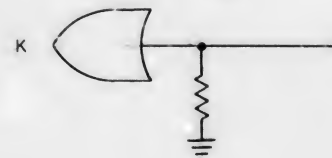
# SYMBOL



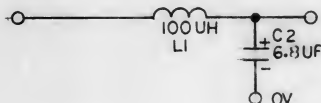
T NETWORK



K NETWORK



R NETWORK (SEE NOTE 2)



POWER FILTER



REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-49	RESISTOR	5.1K	2%	1/4W
R2	-39		2K		
R3	-39		2K		
R4	-39		2K		
C1	1006777-24	CAPACITOR	1000 Pf	10%	50VDC
C2	1006755-79		6.8uf	10%	35DC
L1	1010406-6	INDUCTANCE	100uH	10%	325mA
Q1	1006752	TRANSISTOR			

## NOTES:-

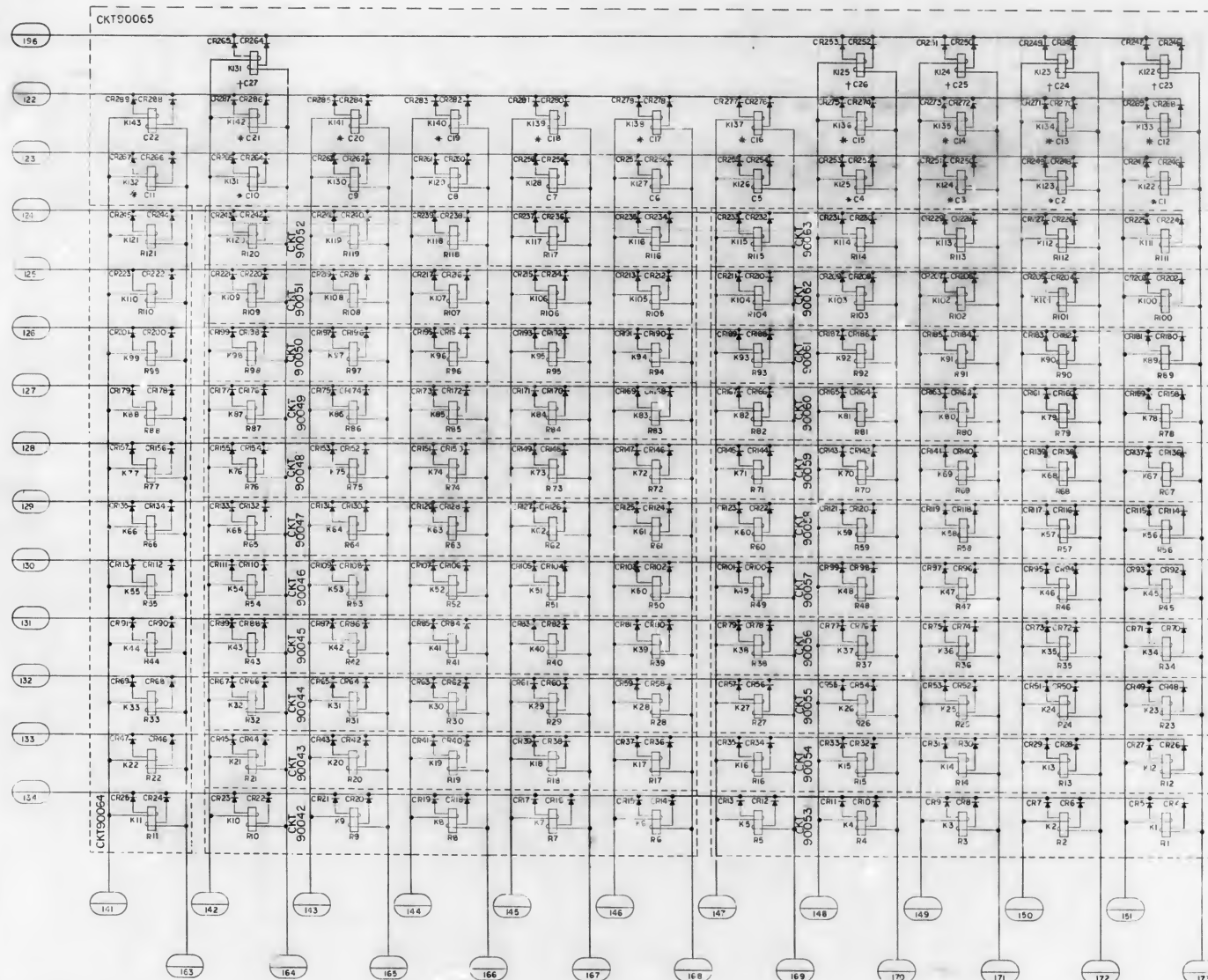
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. NOT IN INTERFACE MODULE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Low S. N. 10/66</i> DATE <i>11/22/63</i>		INTERFACE CIRCUITS	
CHECKED			
APPROVAL <i>Donald A. Bowler 1/24/63</i>			
APPROVAL <i>Edwin C. 1/24/63</i>		CODE IDENT NO. SIZE	
NASA APPROVAL <i>1/24/63</i>		C	
MIT APPROVAL <i>1/24/63</i>		SCALE WT SHEET OF	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING		
MATERIAL		
HEAT TREATMENT		
FINAL FINISH		
NEXT ASSY	USED ON	APPLICATION



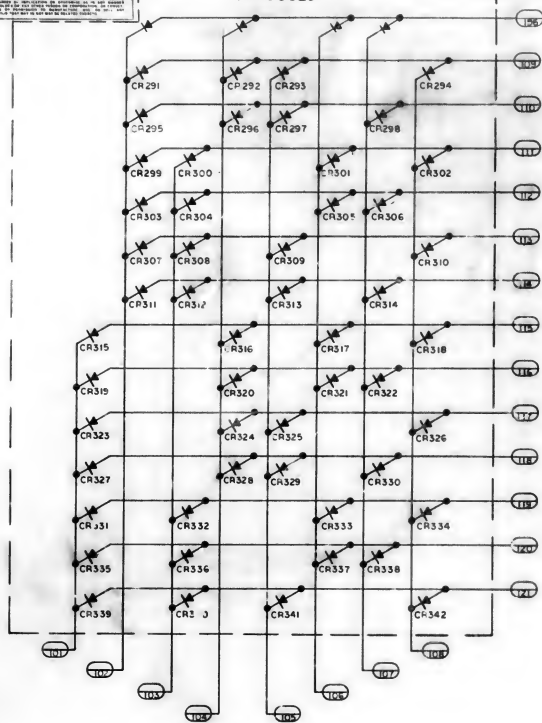


CLASS B RELEASE TDR No. OL 826 DATE 10 Jan 66

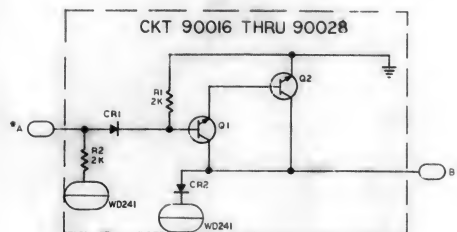
NOTE:  
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS  
PRESCRIBED BY MIL-O-70327  
2. \* NOT USED ON MAIN PANEL  
3. † NOT USED ON NAV PANEL

QTY		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN	
				TYPE OF MATERIAL			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL				MANNED SPACECRAFT CENTER HUSTON TEXAS DATE 9-5-63 DRAWN BY <i>James Allen</i> CHECKED BY <i>James Allen</i> APPROVED BY <i>James Allen</i>			
HEAT TREATMENT HEAT ASSY USED ON APPLICATION				CODE COLOR <i>1006089</i> SIZE <b>E</b> NASA DRAWING NO. 1006089 NET APPROVAL <i>James Allen</i> 10			
SCALE				WT		SHEET OF 2	

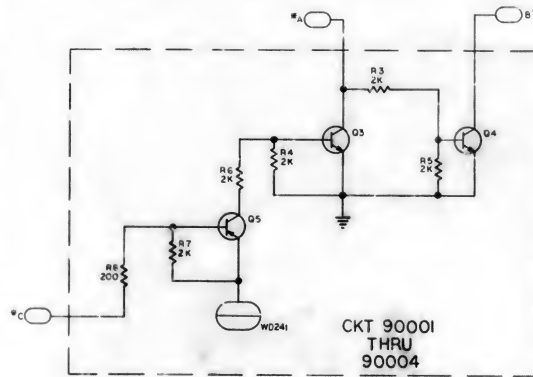
CKT 90029



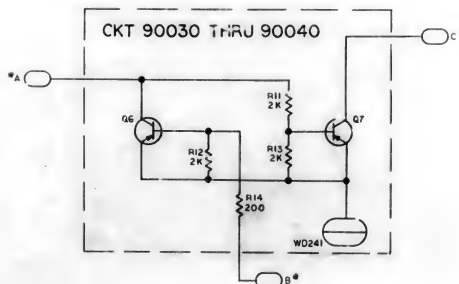
CKT 90016 THRU 90028



CKT 90001 THRU 90004



CKT 90030 THRU 90040



REF DES	PART NO.	DESCRIPTION	VALUE	TOL.	DATING
R1	1006750-30	RESISTOR	2K		1/4 W
R2			2K		
R3			2K		
R4			2K		
R5			2K		
R6			2K		
R7			2K		
R8	1006750-15		200		
R9	1006750-1		200		
R10	1006750-33		2K		
R11			2K		
R12			2K		
R13			2K		
R14	1006750-15		200		
Q1	1006752	TRANSISTOR			
Q2	1006755				
Q3	1006752				
Q4	1006752				
Q5	1006753				
Q6	1006753				
Q7	1006753				
K1-K143	1006772-1	RELAY			
CR1	1006751	DIODE			
CR2					
CR3					
CR4-250					
CR26-342					

CKT NO.	A	B	C SIGNAL
90001	101	102	135 PE 225
90002	103	104	136 PE 226
90003	105	106	137 PE 227
90004	107	108	139 PE 228
90005	109	122	
90017	110	123	
90018	111	124	
90019	112	125	
90020	113	126	
90021	114	127	
90022	115	128	
90023	116	129	
90024	117	130	
90025	118	131	
90026	119	132	
90027	120	133	
90028	121	134	
90030	141	152	163 PE 214
90031	142	153	164 PE 215
90032	143	154	165 PE 216
90033	144	155	166 PE 217
90034	145	156	167 PE 218
90035	146	157	168 PE 219
90036	147	158	169 PE 220
90037	148	159	170 PE 221
90038	149	160	171 PE 222
90039	150	161	172 PE 223
90040	151	162	173 PE 224

- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
  2. UNLESS OTHERWISE SPECIFIED, RESISTORS ARE IN OHMS
  3. \*SEE CHART

FOR INFORMATION ONLY  
CLASS B RELEASE TOP No. 00816 DATE 09/03

QTY REQD	PART OR IDENTIFYING NO.	NAME/CATEGORY OR DESCRIPTION	FIG. NO.
LIST OF MATERIALS			
INSTRUMENTATION LAB			
NANNED SPACECRAFT CENTER			
HOUSTON TEXAS			
AGC SCHEMATIC DISPLAY			
NAV&MAIN PANEL			
E 1006089			
SCALE: 1/4" = 1"			
SHEET 2 OF 2			

